

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

#20 Appeal
Docket
Ben
9/26/03
PATENT

In re Application of :
Miriam Fields-Babineau :
:
Serial No.: 09/736,408 : Art Unit: 3644
:
Filed: December 15, 2000 : Examiner: Smith, Kimberly
:
For: COMFORT TRAINER : Atty Docket: 4523-001
("CANINE HEAD HALTER") : (MFB-0001)
:

APPELLANT'S APPEAL BRIEF UNDER 37 C.F.R. §1.192

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

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Sir:

In accordance with the requirements of 37 C.F.R. §1.192,
Applicant submits the subject Appellant's Appeal Brief in
triplicate, together with the required fee for same.

1. REAL PARTY IN INTEREST

The real party in interest is the individual applicant
Miriam Fields-Babineau.

2. RELATED APPEALS AND INTERFERENCES

Upon information and belief, there are no known appeals or
interferences that will directly affect or be directly affected
by or have a bearing on the Board's decision in the pending
appeal.

3. STATUS OF CLAIMS

Claims 1-5 stand cancelled by way of the Amendment dated August 8, 2002. Claims 1-5 are not appealed.

Claims 6-25 stand amended way of the Amendment dated March 10, 2003.

Claims 6-25 are appealed.

4. STATUS OF AMENDMENTS

All Amendments have been entered.

The Amendment dated March 10, 2003 corrected a typographical error and removed a claim term to simplify issues for appeal.

5. SUMMARY OF INVENTION

The present invention relates to the art of canine head halters. The inventor has written the book *Dog Training with a Head Halter*, which has been made of record in this application and considered by the Examiner in the Office Action dated May 8, 2002. With reference to the first four pages of this book (attached hereto as EXHIBIT A), pages 1-3 provide photographs and descriptions of five ("5") other commercially embodied head halters, while page 4 provides a photograph and description of the present invention.

Claim 6 is illustrative of the present invention and particularly reads on figure 1 (showing dog halter 10 not on dog) and figure 2 (showing dog halter 10 on dog) taken together.

CLAIM 6. A canine head halter (10; pg. 5, ln. 2), comprising:

a collar member (30; pg. 5, ln. 9) configured and arranged to encircle a canine neck behind the ears and below the chin, said collar member (30; pg. 5, ln. 9) including a top strap (60; added to pg. 5, ln. 10) respectively connected at first and second ends thereof to first (32; pg. 5, ln. 13) and second (34; pg. 5, ln. 12) metal collar rings, and a bottom strap (64; pg. 5, ln. 15) respectively connected at first and second ends thereof to the first (32; pg. 5, ln. 13) and second (34; pg. 5, ln. 12) collar rings to thereby form a continuous loop;

a snout loop (11; added to pg. 5, ln. 3) configured and arranged to encircle the canine snout including a single lofted upper nose member (12; pg. 5, ln. 5) respectively connected at first and second ends thereof to first (14; pg. 5, ln. 4) and second (16; pg. 5, ln. 4) metal snout loop rings, and an under chin member (20; pg. 5, ln. 8) respectively connected at first and second ends thereof to the first (14; pg. 5, ln. 4) and second (16; pg. 5, ln. 4) snout loop rings to thereby form a continuous loop;

a first cheek strap (52; pg. 5, ln. 13) connecting the first collar ring (32; pg. 5, ln. 15) to the first snout loop ring (14; pg. 5, ln. 4);

a second cheek strap (50; pg. 5, ln. 12) connecting the second collar ring (34; pg. 5, ln. 12) to the second snout loop ring (16; pg. 5, ln. 12); and

an under chin strap (66; pg. 5, ln. 16) connected at a first end to the bottom strap (64; pg. 5, ln. 16) of said collar member (30; pg. 5, ln. 9) and connected at a second end to a metal cinch ring (22; pg. 5, ln. 8), wherein a portion of the under chin member (66; pg. 5, ln. 16) of said snout loop (11; added to pg. 5, ln. 3) is drawn through the cinch ring (22; pg. 5, ln. 8) for attachment to a dog leash (40; pg. 6, ln. 7).

6. ISSUES

1. Whether the nose strap "50" of Borchelt, et al., U.S. Patent No. 5,992,352, is "non-flat" and cooperates with other elements to anticipate claims 7-9; or whether the Borchelt nose strap "50" is "lofted" and thereby cooperates with the "ring B" of Whitman, U.S. Patent No. 207,467 to obviate claims 6, 11-14, and 16-21. This issue, if granted in Applicant's favor, disposes the case.

2. Whether it would be obvious to use a ring in a combined bridge and halter from the 1878 reference to Whitman, U.S. Patent No. 207,467, in the modern dog halter of Borchelt, et al., U.S. Patent No. 5,992,352 where:

A. there is absolutely no teaching in Borchelt that a ring may be substituted for stitching,

B. the Whitman reference has ***an express teaching away*** in the art, namely that the animal must be guarded against being "rubbed by the ring," and

C. the subject application itself teaches that a reduction of chaffing is a design consideration.

This issue relates to the obviousness rejection of claims 6, 11-14 and 16-21 but has been separated from the dispositive ISSUE 1 as a convenience to the Board.

3. Whether secondary evidence of failure of a commercial embodiment (Borchelt, et al., U.S. Patent No. 5,992,352; and "Snoot Loop Halter for Dogs by Peter Borchelt") should at least be considered by the Examiner when evaluating the teaching of a reference.

4. Whether evidence of commercial success supported by an Affidavit under 37 C.F.R. § 1.132 is "germane" to issues of obvious under 35 U.S.C. § 103 as a matter of law.

5. Whether Whitman, U.S. Patent No. 207,467 actually discloses that "ring B" is a "metal collar ring" as claimed by the Examiner in the Office Action dated October 9, 2002.

6. Whether submission of a published article to the USPO in the form of an IDS with the statement "...this Information Disclosure Statement **should not be construed to be an admission** that the information cited herein is, or is considered to be, material to patentability" raises that reference to the status of "Applicant's admitted prior art" as a matter of law.

7. Whether the Examiner has made a **prima facie** case that the reference "Snoot Loop Halter for Dogs by Peter Borchelt," submitted by Applicant and bearing a date of "V3-08/01" is a

proper reference in view of Applicant's filing date of December 15, 2000.

8. Whether "a wrapped piece of flannel **around** the nose loop" as set forth in "Snoot Loop Halter for Dogs by Peter Borchelt" can be considered "unitary" to obviate claim 10.

9. Whether the Examiner used impermissible hindsight reconstruction to substitute the material of "cotton/nylon braid" (which is not disclosed in **any** reference of record) for "braided fabric" in the Abstract of Borchelt, U.S. Patent No. 5,992,352, to obviate claim 15.

10. Whether the claimed "spaces defined by the weaves of the woven fabric" (which are inherently locked) in claims 22, 23 and 25, are taught by Tachi, et al., U.S. Patent No. 4,798,174, col. 1, ln. 49-52 which states "... holes ... composed of a gap or space formed between a pair of chain stitches not interlocking with each other ..." to support an obviousness rejection.

11. Whether Whitman, U.S. Patent No. 207,467 teaches that "connecting rings reduce chaffing" as stated by the Examiner in the Office Action dated October 9, 2002 (page 8, PARAGRAPH 17), or whether Whitman actually teaches "dependent ends of the had-

band effectually **guard the animal from being rubbed by the ring** or ends of the straps secured thereto" at col. 2, ln. 13-16. And thus, whether a **prima facie** case of obviousness is actually met by the Examiner to obviate claim 24.

7. GROUPING OF THE CLAIMS

- I. Claim 6 stands alone.
- II. Claims 7, 8, 9, and 11 stand together.
- III. Claim 10 stands alone.
- IV. Claim 12 stands alone.
- V. Claim 13 stands alone.
- VI. Claim 14 stands alone.
- VII. Claim 15 stands alone.
- VIII. Claim 16 stands alone.
- IX. Claim 17 stands alone.
- X. Claims 18, 19 and 20 stand together.
- XI. Claim 21 stands alone.
- XII. Claim 22 stands alone.
- XIII. Claim 23 stands alone.
- XIV. Claim 24 stands alone.
- XV. Claim 25 stands alone.

8. ARGUMENT

BACKGROUND

The Applicant is a world renown dog trainer having degrees in Psychology and Zoology, 25 years of experience training dogs, countless published books and articles to her credit, and an eighty page full color book dedicated exclusively to the subject matter at issue, namely canine head halters.

No less than five ("5") commercial embodiments of canine head halters have been tested and evaluated by the Applicant. Photographs and written descriptions of these five ("5") head halters are illustrated and described by the Applicant in her published book *Dog Training with a Head Halter*. See, e.g.

EXHIBIT A.

The primary art relied upon by the Examiner was not only known to the Applicant, but was evaluated and tested by her prior to development of her invention. The Borchelt art is commercially sold as THE SNOOT LOOP and is discussed on page 3 of Applicant's book. See, EXHIBIT A, pg. 3. Further, evidence of record suggests that the primary art relied upon by the Examiner, namely the art to Borchelt, failed to the point of tragedy. As reported in the New York Law Journal, December 8, 2000 (see e.g. IDS of August 20, 2002), a pit bull under the control of Mr. Borchelt viciously attacked the groin of an innocent bystander causing irreparable injury.

ISSUE 1

Whether the nose strap "50" of Borchelt, et al., U.S. Patent No. 5,992,352, is "non-flat" and cooperates with other elements to anticipate claims 7-9; or whether the Borchelt nose strap "50" is "lofted" and thereby cooperates with the "ring B" of Whitman, U.S. Patent No. 207,467 to obviate claims 6, 11-14, and 16-21. This issue, if granted in Applicant's favor, disposes the case.

The Office Action dated October 9, 2002 rejects claims 7-9 as being anticipated by Borchelt, et al., U.S. Patent No. 5,992,352. On page 4, paragraph # 12 of the Office Action, the Examiner states:

"Borchelt ['352] discloses ... a snout loop (50) having a unitary non-flat portion (as seen in figure 1, the snout loop has a thickness and a curved dimension and is therefore non-flat) ..."

The Applicant respectfully disagrees.

FIG. 1 of Borchelt ('352) clearly illustrates that all fabric components, and in particular the nose strap 50, are made from **flat braided fabric**.

"[C]laim language is given the ordinary meaning of the words in the normal usage of the **field of the invention**." Moba, B.V. v. Diamond Automation, Inc., 2003 U.S. App. LEXIS 6285, 9 (Fed. Cir. April 1, 2003) (emphasis added) (citing Toro Co. v. White Consol. Indus., 199 F.3d 1295, 1299, 53 USPQ2d 1065, 1067 (Fed. Cir. 1999)). See also Multiform Desiccants, Inc. v. Medzam, Ltd., 133 F.3d 1473, 1477, 45 U.S.P.Q.2D 1429, 1432 (Fed. Cir.

1998) ("It is the person of ordinary skill in the field of the invention through whose eyes the claims are construed. Such person is deemed to read the words used in the patent documents with an understanding of their meaning in the field, and to have knowledge of any special meaning and usage in the field."); Hoechst Celanese Corp. v. B.P. Chems. Ltd., 78 F.3d 1575, 1578, 38 U.S.P.Q.2D 1126, 1129 (Fed. Cir. 1996) ("A technical term used in a patent document is interpreted as having the meaning that it would be given by persons experienced in the field of the invention ...").

The Applicant uses flat, hollow braided nylon for many of the pieces of the subject invention, such as left cheek strap 50, under chin strap 66, under nose member 20, and top strap 60. See, e.g. Applicant's specification as filed at page 3, ln. 22-23, and figure 1. However, Applicant particularly distinguishes that "...the nose area ... utilizes a soft cotton/nylon braid in a cylindrical shape..." See Applicant's specification at page 3, ln. 10-11. Further, upper nose member 50 is described as "lofted, nylon drawn cord (soft cotton nylon braid)." See, e.g. Applicant's specification as filed at page 3, ln. 23-24.

Persons experienced in the field of the invention, namely the manufacture of canine restraining devices and the like, recognize the term of art "flat" to describe a particular type of cord.

EXHIBIT B is a photographic copy of The Thomas Register 1999, pg. 10976, section CORDAGE BRAIDED, particularly illustrating that "flat braids" are a particular style of cord used in the art.

EXHIBIT C is a photographic copy of the Thomas Register 1999, pg. 10930, section CORD: DOG LEASH, particularly illustrating that "flat braids" and "flat elastic" are particular styles of cord used in the art.

EXHIBIT D is a copy of a product catalog from Western Filament, Inc., with page 201 particularly distinguishing styles of "round twisted twines," "flat braided tapes," and "non-braided flat tapes."

EXHIBIT E is a copy of an entry from the Oxford English Dictionary Online 2003 for the term "flat." While the OED recognizes seventeen ("17") different definitions for the term "flat" (including the literal term as used by the Examiner), it particularly recognizes the term "flat" to describe a style of rope on page 18.

One skilled in the art would interpret the claim language "flat" in accordance with normal usage in the field of the invention. One skilled in the art simply would not expect a flat cord member (such as flat elastic, flat non-elastic, flat braided, or flat non-braided) to be literally flat -- like a playing card or a piece of paper. On the contrary, one skilled

in the art, upon reading the subject claims taken in view of the specification, would be left with the inescapable conclusion that the term "flat" describes a **type of cord** (such as flat elastic, flat non-elastic, flat braided, or flat non-braided) and not that the cord is "literally flat" as maintained by the Examiner.

Because nose strap "50" of Borchelt, et al., U.S. Patent No. 5,992,352, is clearly made from flat braided cord (as that term is known in the art), the Borchelt nose strap "50" simply cannot anticipate the claimed "snout loop ... having a unitary **non-flat** portion..."

The outstanding anticipation rejection of claims 7-9 over Borchelt should be reversed.

Likewise, the Office Action dated October 9, 2002 states on page 5 that the Borchelt ('352) nose strap "50" is "lofted" (as that term is used in the specification) and thereby cooperates with the "ring B" of Whitman, U.S. Patent No. 207,467 to obviate claims 6, 11-14, and 16-21. The Applicant respectfully disagrees.

The original specification at page 3, ln. 23-24 uses the term "lofted" to describe "nylon, draw cord (soft cotton nylon braid) for the nose piece." The original specification at page 3, ln. 24-25 uses the term "flat" to describe "nylon strap for

the collar (behind the ear strap)." As set forth above, **all** straps and/or cords of Borchelt ('352) are of the flat type.

There is no positive term in the cord, rope or strapping art to generically describe a group that is "non-flat" or "thicker than flat."

EXHIBIT F is a copy of an entry from the Oxford English Dictionary Online 2003 for the term "lofted." The fist entry denotes a "lofted house" as a building of two stories, i.e. thicker than a one story house. Likewise, the second and third definitions denote the condition of a ball that has been hit into the air above, i.e. denoting a condition "higher" than a ball hit along the ground.

It is undisputed that the inventor may act as her own lexicographer and use the specification to supply new meanings for terms either explicitly or by implication. Moba, B.V. v. Diamond Automation, Inc., 2003 U.S. App. LEXIS 6285, 9 (Fed. Cir. April 1, 2003) quoting Markman v. Westview Instruments, Inc., 52 F.3d 967, 979, 34 USPQ2d 1321, 1330 (Fed. Cir. 1995) (en banc), aff'd, 517 U.S. 370, 38 USPQ2d 1461 (1996).

In the present case, the Applicant is fully entitled to be her own lexicographer and use the term "lofted" (that is not inconsistent with the standard dictionary definition) to generically describe a class of cord or rope that is "non-flat." However, the term "lofted" also implies an "airy" quality of

softness that is more comfortable to the touch. Thus, the term "lofted" is close to but not synonymous with the term "non-flat."

Because nose strap "50" of Borchelt, et al., U.S. Patent No. 5,992,352, is clearly made from flat braided cord (as that term is known in the art), the Borchelt nose strap "50" simply cannot be used to obviate the claimed "single **lofted** upper nose member."

The outstanding obviousness rejection of claims 6, 11-14, and 16-21 should be reversed.

ISSUE 2

Whether it would be obvious to combine a combined bridge and halter from the 1878 reference to Whitman, U.S. Patent No. 207,467 in the modern dog halter of Borchelt, et al., U.S. Patent No. 5,992,352 in support of an obviousness rejection of claims 6, 11-14, and 16-21 under 35 U.S.C. § 103.

The Manual of Patent Examining Procedure (M.P.E.P.) § 2142 provides the standard for the Examiner to maintain a **prima facie** case of obviousness:

MPEP § 2142

ESTABLISHING A PRIMA FACIE CASE OF OBVIOUSNESS

To establish a **prima facie** case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The **teaching or suggestion** to make the

claimed combination and the reasonable expectation of success **must both be found in the prior art**, and not based on applicant's disclosure. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

The Examiner has failed to make a **prima facie** case of obviousness because there is no teaching in the prior art to make the combination as suggested by the Examiner. On the contrary, the art itself has an express teaching away from combination.

Whitman, U.S. Patent No. 207,467, sets forth in col. 2, ln. 13-15 that "dependent ends of the head-band effectually guard the animal from being **rubbled by the ring** or ends of the straps." Thus, Whitman teaches that "rubbing by a ring" is to be guarded against. On the other hand, Borchelt et al., U.S. Patent No. 5,992,352 particularly illustrates in FIG. 1 that side straps 30 and 40 are attached to nose strap 50 via stitching. See also, e.g. Borchelt ('352) at col. 3, ln. 32.

The Examiner does not suggest that "dependent ends" of the Whitman head-band be used to "guard against rubbing." On the contrary! The Examiner suggests that only "the rings" of Whitman be substituted for the stitching 43 of Borchelt. The only possible reason for this substitution as taught by the references (in accordance with MPEP § 2142) would be **to induce rubbing!** However, an object of the present invention, as set forth on page 2, ln. 10-13, is **not** to irritate the dog's fur or skin.

The Examiner has failed to make a ***prima facie*** case of obviousness in accordance with 35 U.S.C. § 103 and M.P.E.P. § 2142. The outstanding obviousness rejection of claims 6, 11-14, and 16-21 under 35 U.S.C. § 103 must therefore be reversed.

ISSUE 3

Whether secondary evidence of failure (embodied in Borchelt, et al., U.S. Patent No. 5,992,352; and "Snoot Loop Halter for Dogs by Peter Borchelt") should be considered by the Examiner when evaluating the teaching of a reference.

The subject application has specifically set forth that "when other conventional head halters are utilized and the canine wearer pulls off the nose piece, the entire head halter can slip off, thereby having the possibility of losing the dog." Thus, an important feature of the present invention is that it solves ***actual failure*** of conventional canine head halters. This contention by the Applicant is neither arbitrary or capricious but rather addresses a serious problem in the art.

To support an ***obviousness*** rejection, as opposed to an ***anticipation*** rejection, the Examiner must show a "reasonable expectation of success."

MPEP § 2142

ESTABLISHING A PRIMA FACIE CASE OF OBVIOUSNESS

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references

themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, **there must be a reasonable expectation of success.** Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Further, what is the USPTO expected to do with inoperative prior art? Patents cannot and should not be evaluated in a vacuum when evidence of inoperability is present in the record. Rather, the Examiner should **at least** consider **evidence** of inoperability of prior art references when addressed in the specification and presented on the record.

Moreover, one cannot expect a patent itself to set forth that it is inoperative. That would render the patent non-enabled under 35 U.S.C. § 112. This problem is so notorious that Chisum has devoted a section to it, namely 2:5.03[3] [a] [ii].

Chisum, Chisum on Patents 2:5.03[3] [a] [ii]

The difference between the use of references to show anticipation and their use to show obviousness is reflected in the treatment of inoperative or unworkable prior art. As the Supreme Court noted in the Adams case, "an inoperable invention or one which fails to achieve its intended result does not negative novelty." United States v. Adams, 383 U.S. 39, 50, 148 U.S.P.Q. 479 (1966). . . . Yet insofar as the nonobviousness requirement is concerned, a long line of cases holds that an inoperative or unworkable device or patent is part of the prior art **for all that it teaches**.

(numerous citations omitted). See also Motorola, Inc. v. Interdigital Technology Corp., 121 F.3d 1461, 1471, 43 USPQ2d 1481, 1489 (Fed. Cir. 1997) ("'In order to

render a claimed apparatus or method obvious, the prior art must enable one skilled in the art to make and use the apparatus or method.' Beckman Instruments, Inc. v. LKB Produkter AB, 892 F.2d 1547, 1551, 13 U.S.P.Q.2D 1301, 1304 (Fed. Cir. 1989).").

The Office Action dated October 9, 2002 on page 2 states "irrespective of any incident that occurred during the use of the Borchelt invention, the patent to Borchelt is still maintained as a teaching in the art ..."

It is respectfully submitted that the Examiner has completely disregarded the Applicant's specification that conventional canine head halters fail. Moreover, the Examiner has disregarded secondary evidence of lack of utility and inoperability of the Borchelt device. It is respectfully submitted that an Examiner should be required to evaluate secondary evidence of inoperability of a patent's subject matter so that the Examiner may determine "all that it teaches." Common sense dictates that if a patented invention actually fails to operate, then this should be considered by the Examiner as "indicia" or "secondary considerations" during an obviousness determination. Here, the Examiner has failed to make such a determination.

Once the Examiner has made a **prima facie** case of obviousness (which is not conceded), then the Applicant may present evidence of failure of a prior art reference relied upon by the Examiner. Once evidence of failure is presented, the burden then shifts to

the Examiner to present evidence that the prior art reference actually works. There is simply no evidence of record to support a contention that the Borchelt art operates as intended.

Because the Examiner has now failed to present evidence that the Borchelt reference operates as intended, that reference should be removed from consideration. On the other hand, should the Examiner seek to rely upon parts of a reference for "all that it teaches" the burden then shifts to the Examiner at least to point out that the parts relied upon operate as intended. There is no evidence of record to teach or suggest that "all that Borchelt teaches" operates as intended, and the Examiner has failed to meet the burden of persuasion that Borchelt obviates the present invention alone or in combination.

ISSUE 4

The Office Action dated October 9, 2002, page 2, paragraph 3, states that a declaration of commercial success is not "germane to the rejections at issue."

Once the Examiner has made a **prima facie** case of obviousness (which is not conceded here), the burden then shifts to the Applicant to present evidence of non-obviousness.

The Applicant respectfully submits that evidence of commercial success is germane to the issue of obviousness and should **at least** be considered by the Examiner when made of

record. The Applicant respectfully submits that failure to consider a Declaration offering evidence of commercial success (as opposed to considering the Declaration but not being persuaded) is incorrect as a matter of law.

This issue relates to all obviousness-type rejections in this application.

ISSUE 5

Whether Whitman, U.S. Patent No. 207,467 actually discloses that "ring B" is a "metal collar ring" as claimed by the Examiner in the Office Action dated October 9, 2002.

In short, Whitman fails to teach that "ring B" is metal. A number of materials were available to inventors in 1878, including wood, rope, natural rubber, tar covered fabric, and leather.

Whitman sets forth in col. 2, ln. 13-17 that rubbing of the ring is to be avoided.

Moreover, the "rubbing of the ring" is a specific problem that the Applicant sought to overcome in her invention. As illustrated on page 2 of Applicant's book, see EXHIBIT A, the K-9 KUMALONG, invented by Alice DeGroot, uses a rubber-type ring. The theory being that a rubber-type ring would mold to the canine face and produce additional comfort. However, through experimentation with the K-9 KUMALONG, the Applicant discovered

that the rubber ring wears the fur of the dog. Just as the Whitman ring wears the fur.

However, the Applicant discovered that use of a metal ring (which does not bend to the canine face) actually produces less wear on the fur because of the tendency of the metal to slide over the fur.

Not only do the five ("5") other head halters set forth in EXHIBIT A fail to teach the use of a metal ring, but Whitman itself also teaches that "ring B" (which may be a rubber ring for all we know) produces wear. Thus, the use of a metal ring as claimed provides a significant non-obvious contribution to the art.

ISSUE 6

Whether submission of a published article to the USPTO ("Snoot Loop Halter for Dogs by Peter Borchelt") in the form of an IDS with the statement "...this Information Disclosure Statement **should not be construed to be an admission** that the information cited herein is, or is considered to be, material to patentability" raises that reference to the status of "Applicant's admitted prior art" as a matter of law.

The undersigned is aware of no case law or administrative rule, what-so-ever, that states that submission of material in an IDS constitutes an "admission" as to the prior art. On the

contrary, the IDS rules, 37 C.F.R. §§ 1.97-98 specifically provide for "materiality." Materiality may relate to a number of issues, such as an Examiner's general understanding of the art.

It is respectfully requested that this Honorable Board of Appeals clarify for the patent bar ***in a published decision*** that submission of material in an IDS is not an "admission" as a matter of law.

ISSUE 7

Whether the Examiner has made a ***prima facie*** case that the reference "Snoot Loop Halter for Dogs by Peter Borchelt," submitted by Applicant and bearing a date of "V3-08/01" is a proper reference in view of Applicant's filing date of December 15, 2000.

The evidence of record proves that the Assistant Examiner incorrectly relies upon "Snoot Loop Halter ..." as a reference.

The rejection of claims 10 and 15 under 35 U.S.C. § 103(a) in view of a combination including "Snoot Loop Halter ..." should be reversed.

ISSUE 8

Whether "a wrapped piece of flannel ***around*** the nose loop" can function as a ***unitary*** non-flat portion to obviate claim 10.

Claim 10 depends from claim 7, which sets forth that the cheek straps are connected to the **unitary** non-flat portion. A wrapped piece of flannel (as suggested by the "Snoot Loop Halter ..." reference) **negates** the term "unitary" because it would then be formed of two pieces. Moreover, the wrapped piece of flannel of Borchelt is not "connected" to anything.

The Board should give patentable weight to the term "unitary" and reverse the obviousness rejection of claim 10.

ISSUE 9

Whether the Examiner used impermissible hindsight reconstruction to substitute the material of "cotton/nylon braid" (which is **not** disclosed in **any** reference of record) for "braided fabric" in the Abstract of Borchelt, U.S. Patent No. 5,992,352, to obviate claim 15.

The Applicant specifically chose a type of cord **different from** the Borchelt material for the snout loop to achieve the goal of reduced wear to the canine snout. How can this then be obvious over the material used by Borchelt?

The obviousness rejection of claim 15 should be reversed.

ISSUE 10

Whether the claimed "spaces defined by the weaves of the woven fabric" (which are inherently locked) in claims 22, 23,

and 25 are taught by Tachi, et al., U.S. Patent No. 4,798,172, ln. 22-25 which states that "... holes ... composed of a gap or space formed between a pair of chain stitches not interlocking with each other ..." to obviate claim 22.

Tachi, et al. ('172), specifically states in ln. 22-25 that "... holes ... [are] formed between a pair of chain stitches **not interlocking** with each other ..." Thus, in Tachi, et al. ('172), specific holes are formed. These holes "4" are even illustrated in FIG. 1. The fabric of Tachi, et al. is not "pierced." On the contrary, Tachi, et al. actually teaches that the **weave itself** should be altered to produce the holes 4.

On the other hand, claim 22 particularly sets forth "piercing through spaces defined by the weaves." This is a patentable feature. The "Snoot Loop Halter for Dogs" by Peter Borchelt (relied on so much by the Examiner) states on page 2:

"It may take 5 or 10 minutes and several tries to get it right. Do NOT try to adjust the Snoot Loop while it is on your dog."

The "Snoot Loop Halter..." requires that a "knot" be formed in the cord to make the adjustment. Also, a "snap buckle" is used around the collar. The "Snoot Loop Halter..." provides a convoluted and time consuming adjustment. The Board is respectfully reminded that the purpose of these halters is to

train the dog. Imagine spending 10 minutes of adjustment while your dog is jumping, barking, and possibly nipping at your hands.

On the other hand, the presently claimed invention set forth in claim 22 provides piercing woven fabric that allows proper attachment to the dog on the first try.

The obviousness rejection of claims 22 should be reversed.

Claim 23 depends from claim 23 but further sets forth that the snout loop is a unitary member. The obviousness rejection of claim 23 should be reversed for the reasons set forth above with reference to claim 22 and further for the reasons set forth in ISSUE 8, namely that the art to Borchelt ('352) fails to teach a unitary member.

Claim 25 depends from claim 22 but further sets forth that all rings are metal. The obviousness rejection of claim 25 should be reversed for the reasons set forth above with reference to claim 22 and further for the reasons set forth in ISSUE 5, namely that Whitman ('467) and all art of record fails to teach that all rings are metal.

ISSUE 11

Whether Whitman, U.S. Patent No. 207,467 teaches that "connecting rings reduce chaffing" as stated by the Examiner in the Office Action dated October 9, 2002 (page 8, PARAGRAPH 17), or whether Whitman actually teaches "dependent ends of the had-

band effectually **guard the animal from being rubbed by the ring** or ends of the straps secured thereto" at col. 2, ln. 13-16. And thus, whether a **prima facie** case of obviousness is actually met by the Examiner to obviate claim 24.

It is respectfully submitted that the Examiner has failed to make a **prima facie** case of obviousness in view of MPEP § 2142 addressed above in ISSUE 2.

The outstanding obviousness rejection of claim 24 should be reversed.

Serial No.: 09/736,408

Atty. Docket: 4523-001

CONCLUSION

All rejections have been complied with, properly traversed, or rendered moot. The Board of Appeals is therefore respectfully requested to reverse all rejections and allow the subject application.

Favorable consideration and allowance are earnestly solicited.

Respectfully submitted,


Todd E. Marlette
Registration No. 35,269

Date: 8/7/03
13311 Clausen Rd., Suite 201
Trufant, MI 49347-9791
Telephone: 616-984-5312
Facsimile: <<no fax>>
TEM/sef

CLAIMS AS THEY STAND

6. (TWICE AMENDED) A canine head halter, comprising:

a collar member configured and arranged to encircle a canine neck behind the ears and below the chin, said collar member including a top strap respectively connected at first and second ends thereof to first and second metal collar rings, and a bottom strap respectively connected at first and second ends thereof to the first and second collar rings to thereby form a continuous loop;

a snout loop configured and arranged to encircle the canine snout including a single lofted upper nose member respectively connected at first and second ends thereof to first and second metal snout loop rings, and an under chin member respectively connected at first and second ends thereof to the first and second snout loop rings to thereby form a continuous loop;

a first cheek strap connecting the first collar ring to the first snout loop ring;

a second cheek strap connecting the second collar ring to the second snout loop ring; and

an under chin strap connected at a first end to the bottom strap of said collar member and connected at a second end to a metal cinch ring, wherein a portion of the under chin member of said snout loop is drawn through the cinch ring for attachment to a dog leash.

7. (NEW) A canine head halter, comprising:

a collar member configured and arranged to encircle a canine neck behind the ears and below the chin;

a snout loop configured and arranged to encircle the canine snout, said snout loop having a unitary non-flat portion to contact the upper canine snout when worn;

first and second cheek straps directly connecting the collar member to the unitary non-flat portion; and

an under chin strap connected at a first end to said collar member and connected at a second end to a ring,

wherein a lower portion of said snout loop is drawn through the ring to close the canine jaw.

8. (NEW) The canine head halter according to claim 7, wherein a dog leash is connected to the lower portion of said snout loop after being drawn through the ring.

9. (NEW) The canine head halter according to claim 7, wherein a retaining ring is attached about the lower portion of said snout loop after being drawn through the ring to thereby retain the drawn relation of the lower portion of said snout loop and the ring.

10. (NEW) The canine head halter according to claim 7, wherein the non-flat portion of said snout loop has rounded edges to thereby reduce chafing.

11. (NEW) The canine head halter according to claim 7, wherein said first and second cheek straps are respectively connected to said collar member by respective first and second rings.

12. (NEW) The canine head halter according to claim 11, wherein the first and second rings are metal.

13. (NEW) The canine head halter according to claim 11, wherein said first and second cheek straps are respectively connected to said snout loop by respective third and fourth rings.

14. (NEW) The canine head halter according to claim 13, wherein the third and fourth rings are metal.

15. (NEW) The canine head halter according to claim 7, wherein the non-flat portion of said snout-loop is cotton/nylon braid having a cylindrical shape.

16. (NEW) The canine head halter according to claim 7, wherein said collar member includes a top strap respectively connected at first and second ends thereof to first and second metal rings, and a bottom strap respectively connected at first and second ends thereof to the first and second rings to thereby form a continuous loop.

17. (ONCE AMENDED) A canine head halter, comprising:
a collar member configured and arranged to encircle a canine neck behind the ears and below the chin, said collar member including top and bottom straps respectively connected by first and second metal rings;
a snout loop configured and arranged to encircle the canine snout including an upper nose member and an under chin member respectively connected by third and fourth metal rings;
a first cheek strap connecting the first and third rings, and a second cheek strap connecting the second and fourth rings; and
an under chin strap connected at a first end to the bottom strap of said collar member and connected at a second end to a fifth ring,
wherein a portion of said snout loop is drawn through the fifth ring to close the canine jaw.

18. (ONCE AMENDED) The canine head halter according to claim 17, wherein the first cheek strap rotates about a portion of the first ring and rotates about a portion of the third ring to conform to the canine head.

19. (NEW) The canine head halter according to claim 18, wherein the second cheek strap rotates about a portion of the second ring and rotates about a portion of the fourth ring to conform to the canine head.

20. (ONCE AMENDED) The canine head halter according to claim 17, wherein the first cheek strap rotates about a portion of the first ring and a portion of the third ring, and the second cheek strap rotates about a portion of the second ring and a portion of the fourth ring such that the canine head halter conforms to the canine head.

21. (NEW) The canine head halter according to claim 17, wherein the upper nose member of said snout loop is a unitary non-flat member.

22. (ONCE AMENDED) A canine head halter, comprising:
a collar member configured and arranged to encircle a canine neck behind the ears and below the chin, said collar member

formed from piercible woven fabric that is permanently attached at a first end to a buckle, said buckle connecting the first end of said collar member to a plurality of positions along a second end of said collar member by piercing through spaces defined by weaves of the woven fabric;

a snout loop configured and arranged to encircle the canine snout including an upper nose member and an under chin member;

first and second cheek straps directly connecting the collar member to said snout loop; and

an under chin strap connected at a first end to said collar member and connected at a second end to a cinch ring,

wherein a portion of said snout loop is drawn through the cinch ring to close the canine jaw.

23. (NEW) The canine head halter according to claim 22, wherein the upper nose member of said snout loop is a unitary non-flat member.

24. (NEW) The canine head halter according to claim 22, wherein said first cheek strap is connected to said collar member by a first ring and said second cheek strap is connected to said collar member by a second ring, such that said first and second cheek straps rotate about respective portions of the first and second rings to conform to the canine head, and

wherein said first cheek strap is connected to said snout loop by a third ring and said second cheek strap is connected to said snout loop by a fourth ring, such that said first and second cheek straps rotate about respective portions of the third and fourth rings to conform to the canine head.

25. (NEW) The canine head halter according to claim 22, wherein the non-flat portion of said snout loop has rounded edges to thereby reduce chafing and all rings are metal.

Dog Training with a Head Halter

the most effective way to correct canine behavior problems.



Endorsed by the
ASPCA®

Miriam Fields-Babineau

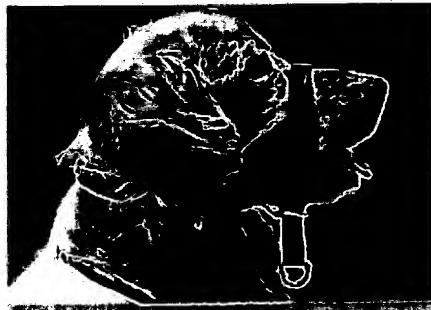
BARRON'S

Introduction



K-9 Kumalong

In 1965 Michael Fox, John Scott, John Fuller, and Clarence Pfaffenberger reported their findings on canine communication, learning processes, and behavior. The 1970s brought the British trainer Barbara Woodhouse, into millions of homes through her books and television shows, increasing public awareness of how much dogs need to be trained. People became more cognizant of the importance of training their pets. However, the same elements remained—neck collars and choke chains.



Halti

In the late 1970s Dr. Alice DeGroot, an American veterinarian, noticed that horses and dogs could be controlled in similar ways. Through her work with rescued Irish Wolfhounds, Dr. DeGroot discovered that leading a dog by the head, as one would walk a horse, offered a less negative experience, faster learning, and better control without having to match muscle strength. The head halter worked, not only in teaching basic commands, but also in overcoming destructive behaviors. Through her behavioral studies and training skills, she invented the K-9 Kumalong, which was patented in 1984. Logical training was born. Where the head goes, the body follows.

Head halters not only reduce a dog's ability to pull, but also mimic the way mother dogs communicate with their puppies. When a youngster misbehaves, she grabs him by the muzzle and growls. The halter, when pulled down on the muzzle, is similar to mother's message. The neck strap, positioned behind the ears, maintains the position of the nose strap. Thus, the halter works in several ways: reducing the dog's pull by up to 90 percent (a real boon to a small person trying to train a large dog) and showing the dog that his handler maintains the Alpha position.

In 1984 Dr. Robert K. Anderson, D.V.M., Ruth Foster, and Jeffrey Levine developed the figure 8 head halter—the Gentle Leader. The Gentle Leader was the second type of head halter developed and patented in the United States. The Gentle Leader utilizes a similar type of pressure but is more difficult for the dog to remove. This device combines a regular collar and a halter, allowing the user to walk a well-behaved dog with a neck collar and a poorly behaved dog with the head halter. When the head halter portion is no longer required, the strap becomes a pull tab when training the dog off-lead. The pull tab

Introduction



BeHave



Gentle Leader

is a means of regaining control of a dog that presents a minor challenge for the handler such as not heeling in the proper position.

Another figure 8 halter, the BeHave, was developed by Nancy David and John Doerr of Carlsbad, California. The BeHave also offers the user the options of using it either as a regular collar, head halter, or choke collar. The BeHave also includes a leash, making it an all-in-one product.

The Gentle Leader and BeHave halters have a clip below the jaw that can tighten the nose snap, making it more difficult for the dog to remove the halter. These products were designed to allow dog owners to leave the halter on while in the house with their dog, as an aid in reducing in-home behavior problems.

Dr. Roger Mugford, Ph.D., a British psychologist, developed a head halter similar in style to Dr. DeGroot's K-9 Kumalong—the Halti. Haltis have been sold in the United States since the mid-1980s. With an adjustable neck snap and always loose nose piece, it is utilized very similarly to a horse's halter. It guides the dog's head without restriction and, as with the other head hal-

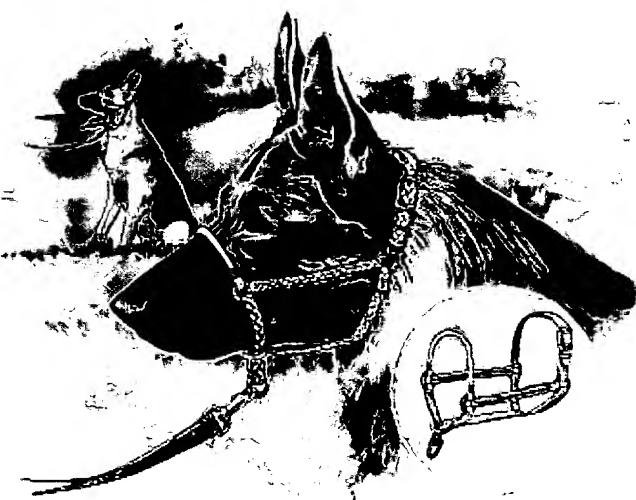
ters, can be used to control lunging and aggression.

The Snoot Loop (patent pending), developed by Dr. Peter Borchelt, Ph.D., is another conventional halter based on Dr. DeGroot's K-9 Kumalong. This head halter allows for more variation in head shape, with adjustable back, sides, and nose loop. Dr. Borchelt has also recently developed a head halter for use



Snoot Loop

Introduction



Comfort Halter

on dogs with brachiocephalic [short] noses, such as Pugs, Boston Terriers, and English Bulldogs.

The latest head halter to enter the market is the Comfort Halter, designed by the author of this book. Of similar design to the K-9 Kumalong, it offers a thinner, softer nose piece, is easily adjustable, and has a neck strap that does not loosen with use.

As a dog owner, you want to be assured that your beloved pet will learn to behave and not be hurt in the process. Although it is impossible to entirely abolish all negative factors in training, eliminating as many as possible makes for more effective schooling. It is a proven fact that both dogs and people learn faster if they are not grappling with each other at the same time. Not only is the head halter the easiest means of controlling your dog, it also renders all other training devices obsolete

Head halters are easy to use, the communication is clearer, and dogs learn faster. No more going for a walk and returning with one arm longer than the other. No more damaging a dog's neck from improper use of a choke chain. And no need to cause pain, ~~as~~ with a pinch collar or an electronic collar, to obtain a response. In fact, head halters work very well on dogs that are pain tolerant, dominating, and/or unresponsive to ~~bait~~. Halters can be used on puppies or adult dogs of almost any temperament with positive results.

People around the world are learning about the ease and logic in training with a halter. Seminars, animal expositions, and conferences are relaying the message that there is a better way: a more humane way to train your dog. Teach your dog using logic, not pain. Use a head halter. Your dog will learn faster.

Ex. C

TH MAS REGISTER 1999

CORD: CONTROL (Contd)

CORD: CONTROL (Contd)

IL: CHICAGO

MOLDED PLASTICS, L.P., 4485 West Fullerton (ZIP 60633) (Designs & Mfrs. Custom Cable Assemblies, Cellular Accessories (Cigarette Lighter Adapters, Hands-Free Car Kits) & Contract Mfr. Of Printed Circuit Board Assemblies) (773-342-3800). NR

IL: JOLIET

PHOENIX ROPE & CORDAGE CO., INC., 220 Alesio Dr., P.O. Box 520 (ZIP 60433) (Braided & Twisted, All Types & Sizes, OSHA Colors, All Commercial & Govt. Specs.) (800-809-7673). 1M+ (See Our Information Available By Fax: 800-454-5471).

UNITED UNIVERSAL INDUSTRIES, INC., 20854 Burr Court (ZIP 60433-9713) (UL/CSA Approved Cordsets With In-Line Switch, International Cord Sets, Cable Assemblies, Wiring Harnesses, Molded Strain Relievers, Relocatable, Commercial Overmolding, Custom Molded Connectors & DC Plugs) (800-882-7228). 1M+

IL: NAPERVILLE

All Line, Inc., 31 W. 310 B1st (A Complete Line Of Braided & Twisted Cordage Products Made From Nylon, Polypropylene, Polyester, Cotton, Manila & Steel). 1M+

IL: NORTH CHICAGO

KING WIRE, INC., One Cable Place (ZIP 60064) (Multi-Conductor, High Temperature, Paint Coated, Power/Control, Trac Cable, Direct Burial, Shielded, Unshielded, Sealed, IMA8) (800-453-5195) (5484). 25M+ (See Our Full Page Color Ads At "Cables: Electric" & "Wire"; See Our Multiple Ad Program At "Wire") (See Our Company Profile in Volume 28).

▲ SEE OUR CATALOG / IN CATALOG FILE SECTION

IL: OAK BROOK

ACE COMMERCIAL & INDUSTRIAL SUPPLY, 2200 Kensington Court (ZIP 60521) (Hand Tools, Power/Welding Tools, Abrasives, Safety & Security, Building Hardware, Fasteners, Material Handling & Storage, Paint & Sundries, Lubricants, Adhesives & Tapes, Maintenance & Janitorial, Electrical, Plumbing/HVAC, Motors & Power Transmission, & Outdoor Equipment) (800-809-2801). 250M+ (See Our Multiple Ad Program At "Paints") (See Our Company Profile in Volume 24).

▲ SEE OUR CATALOG / IN CATALOG FILE SECTION

IL: VICKSBURG

OZLAND ENTERPRISES, INC., 415 W. Prairie (ZIP 49097) (Mfr. Of Hook & Loop Cable Tie & Custom Fabricated Straps For A Wide Variety Of Applications) (800-649-0708). 1M+

MO: ST. JOSEPH

Laschen Wire Corp., 609-T N. 2nd St., P.O. Box 407. NR Wires Corp. Of America, Inc., 809 N. 2nd St., P.O. Box 288. NR

MO: WILWOOD

Benson & Associates, Inc., 18552 Lancaster Est. Ln., NR NJ: FAIRFIELD

Offex Wire & Cable, Inc., 30 Plymouth St., Dept. A-7B (Electronic & Electrical Wires & Cable, Audio, Coaxial, Twisted, Communication & Custom, Ribbon, Computer Data, High Temp. Cables). 50M+ (See Our Company Profile in Volume 24).

MO: WISCONSIN

FEILER U.S. CORP., 88 Vernon Ave., Unit 5 (ZIP 08873) (Mfr. Of International & Domestic Line Cords, Also Carry Appliance Couplers, Rewirable Plugs & Connectors, In-House Assemblies) (800-797-7523).

NY: JAMAICA

King Wires, Inc., 179-45 110th Ave. (Mfrs. & Dist. Of Electric & Electronic Wires & Cables). NR NY: MELVILLE

MFG. INDUSTRIAL SUPPLY CO., 75-T Maxxes Rd. (ZIP 11747-5181) (Supplier Of 372,000 Products From 1,000 Mfrs.; Cutting, Machine, Hand & Power Tools, MRO Supplies, Abrasives, Fasteners, Precision Instruments, Machinery, Electrical Supplies, Safety Equipment, Industrial Components, Plastics, Material Handling, Pump, Power Transmission, Jeitorials; Same Day Shipping) (800-783-7873). 50M+ (See Our Company Profile in Volume 25).

▲ SEE OUR CATALOG / IN CATALOG FILE SECTION

NY: WESTBURY

CUSTOM CABLE CORP., 242 Butler St., P.O. Box 1080-T (ZIP 11590-3193) (UIT Shipments, Cut To Length, Multi-Conductor Type Bc Control, Portable Data, Power, Industrial, Household, 1000 Varieties Of Cable In Stock, Customizing Available) (In U.S. & Canada Call: 800-832-3800; Or Call: 516-334-3800). 10M+ (See Our Full Page Ad At Cables: Electric)

NC: GASTONIA

All Mfrs. Of Braids, 1612 Warren Ave., Dept. T (Mfrs. Of Braids, Cord, Ropes, Threads, Twines, Yarns, Custom Or From Stock; All Materials & Sizes). NR

NC: WENDALE

Siemens Power Transmission & Distribution, LLC - Power Cables, Power Cables, Clt 700-8100 Rd. (Flexible Electric Cables For Process Controls, Cranes, Hoist, Submersible Pumps, Bulk Material Handling, Medical Equipment, Machine Tools, Robotics, Servo & Variable Speed Drives). 250M+ (See Our Company Profile in Volume 24).

PA: PITTSBURGH

King Wire, Inc., 5000 Euclid Ave., Suite 303 (Mfrs. & Dist. Of Electric & Electronic Wires & Cables). NR

TX: CARRINGTON

Abaqus Equipment, Inc., 1808-T John Connally Dr. (So & Vinyl). 1M+

TX: GRAND PRAIRIE

King Wire, Inc., 100 Great S.W., Parkway, Suite 110 (Mfrs. Of Electric & Electronic Wires & Cables). NR

VT: BELLOW'S FALLS

WHITNEY BLAKE CO., P.O. Box 579, Industrial Dr. (ZIP 05101-0579) (Mfr. Of Rubber & Plastic Custom-Designed Wires, Ropes, Rattail, Cordage & Cable Assemblies For Electrical & Electronic OEM Applications. ISO 9002 Certified) (800-323-0478). 5M+

CORD: COTT N

(see Cordage: Cotton)

CORD: DET NATING

AZ: BENSON

Apache Nitrogen Products, Inc., P.O. Box 700... 10M+ (Contract Dv., Apache Nitrogen Products, Inc., P.O. Box 700)... 10M+

CA: CALIFORNIA

Conrad-Jarvis Corp., 217-T Conant St., P.O. Box 678 (ZIP 02882) (401-722-4700).

CA: CARLSBAD

Glenair, Inc., 50-T Saunders St., P.O. Box 1740 (ZIP 92041) (Braided, Woven & Knitted Elastic & Elastic Webbing, Cord, Tape, Cloth, Paper, Film, Plastic, Non-Cat. Stock, Cloth, In-Molded Prints & Assembly, Stock Colors & Sizes) (800-445-6700).

CA: CLOVIS

Franklin Braid Mfg. Co., 820-T Davis St., P.O. Box 711-T (ZIP 23847) (Mfrs. Of Complete Lines Of Braids, Production 20,000,000 Feet Weekly. All Types, Cord, Ropes, Twine, Up To 3/8" Width, Drawstring, Thread Lines, Dog Leash) FAX: 800-898-5952. 5M+

CA: EMPORIA

Franklin Braid Mfg. Co., 820-T Davis St., P.O. Box 711-T (ZIP 23847) (Mfrs. Of Complete Lines Of Braids, Production 20,000,000 Feet Weekly. All Types, Cord, Ropes, Twine, Up To 3/8" Width, Drawstring, Thread Lines, Dog Leash) FAX: 800-898-5952. 41421.

CA: MONTREAL

Canswe, Inc., 111-T Chabanel St. W. (Drawstring

CORD: DRAPERY

(see Trimmings: Drapery, Upholstery)

CORD: DRAW

(see Drawings: Drapery)

CORD: DRAW



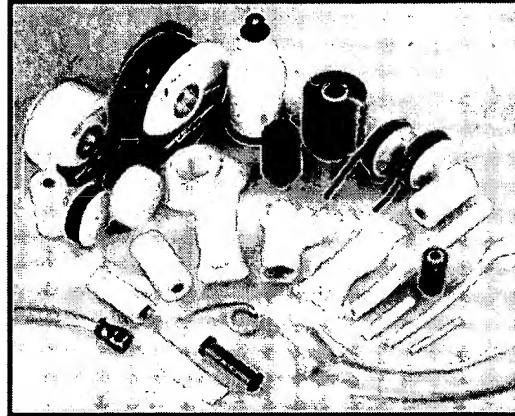
Flat Braided Tapes

Only single source for all Stator Lacing needs

At Western Filament, specialists in textiles, chemicals, plastics, and process control, combine their skills to produce a complete line of flat or round braided tapes and twisted cords to meet the most stringent stator lacing requirements.

Flat Braided Tapes

Trouble free lacing for stator tying, coil wrapping and other electrical applications. Shrinks to fit, lays flat, stays in place, and won't snag or fray.



Polyester Tapes (Class F*)

- Typical shrinkage 10-11% at 325°F/1 hr.

High tenacity continuous filament braided polyester (Dacron®) yarn. Western Filament's DHS tape minimizes snagging, improves the insulation bond, and when coated will not frizz, fray or unravel.

NOTE: Supplied with Western Filament's "CL" Coating (See Coatings)*

Part Number	Nominal Width Inches	Nominal Thickness Inches	Break Lbs.	Standard Put-up
DHS-00CL	.500	.032	700	250 ft.
DHS-0CL	.375	.028	450	250 yds.
DHS-1CL	.225	.015	190	250 yds.
DHS-2CL	.125	.015	80	250 yds.
DHS-3CL	.080	.015	50	500 yds.
DHS-4CL	.062	.015	35	500 yds.

Pre-Shrunk Polyester (Class F*)

- Less than 3% RS at 350°F/1 hr.

For fine wire or soft insulation systems where shrinkable tensions are undesirable.

NOTE: Supplied with Western Filament's "CL" Coating (see coatings).*

Part Number	Nominal Width Inches	Nominal Thickness Inches	Break Lbs.	Standard Put-up
DPS-00CL	.500	.032	700	250 ft.
DPS-0CL	.375	.028	450	250 yds.
DPS-1CL	.200	.015	190	250 yds.
DPS-2CL	.125	.015	80	250 yds.
DPS-3CL	.080	.015	50	500 yds.
DPS-4CL	.062	.015	35	500 yds.

Kevlar® Tape (Class H)

A high temperature, high strength material from DuPont. Kevlar® provides the advantages of fiberglass without causing skin irritation and processing problems. Kevlar® is approximately four times stronger than Nomex® and decomposes at about 900°F.

****COATINGS** - add the code letter designating the finish to the end of the part number. CL-Polyurethane; X-Uncoated; S - Silicone; W - Wax

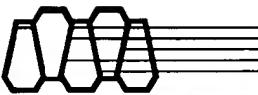
® DACRON, KEVLAR, and NOMEX are DuPont registered trademarks.

Fiberglass Tape (Class H)

Fiberglass, the industry standard for "Class H" applications. It is strong, heat resistant, and non-flammable. Available in a variety of flat braided constructions.

Nomex® Tape (Class H)

DuPont's Aramid fibers are braided into a smooth flat tape which is stable at high temperatures, self-extinguishing and suitable for hermetic or conventional applications. Available Coated or Uncoated. Carbonizes at 800°F.



Lacing and Spot Tying Materials

For Aircraft, Electrical, Electronic and Space Vehicle Harnessing

Round Twisted Twines

Per MIL-T-713



Round twisted constructions are used primarily by electrical and "non-flight" hardware producers. Primary advantages include low cost and established industry acceptance. Though round twisted constructions provide less "gripping" area on the bundle, and do not accept impregnation as completely as flat tapes, they still enjoy continued widespread usage throughout industry.

Flat Braided Tapes

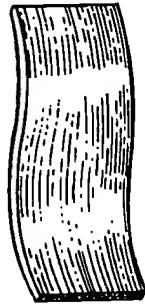
Per CID-A-A-52080B, 081B, 082B, 083B, and 084B (Formerly MIL-T-43435)



Flat Braided Tapes are the "second generation" lacing/spot tying construction. They are designed to provide maximum strength with minimum space requirements. Other advantages include increased gripping area and superior impregnation characteristics. Flat braided tapes are specified for most military and space oriented applications, and are currently finding increased usage among commercial, electrical and electronic manufacturers.

Non-Braided Flat Tapes

Not to Military Specifications



Nylon Mono-ty constructions provide a low cost non-braided material for use in commercial electronics and non-flight hardware. Oriented Nylon fibers are formed into a flat ribbon-like construction and impregnated with microcrystalline wax. Mono-ty constructions exceed IBM 147440, and similar industry requirements.

Materials (Specified in CID-A-A-52080B, 081B, 082B, 083B, and 084B—Formerly MIL-T-43435)

Type	Material Description	Approx. Operating Temp. Range	Finishes Available
52080B	Polyamide (Nylon)	-67°F, +350°F	Wax, synthetic elastomer, vinyl resin, liquid nylon or uncoated
52081B	Polyester (Dacron®)	-100°F, +350°F	Wax, synthetic elastomer, or vinyl resin
52082B	Tetrafluorocarbon (Teflon®)	-100°F, +450°F	Synthetic elastomer
52083B	Fiberglass	-100°F, +800°F	Teflon coating w/synthetic elastomer, or vinyl resin
52084B	High Temp Polyamide (Nomex®)	-100°F, +500°F	Wax, synthetic elastomer, or vinyl resin
Specified in MIL-T-713E			
P (Unwaxed)	Polyamide (Nylon)	-67°F, +350°F	No finish. Specify Type P unwaxed
P (Waxed)	Polyamide (Nylon)	-67°F, +350°F	Microcrystalline fungicidal wax

9

Coatings and Impregnations (For Knot Holding and Fungus Resistance)

Mil-Spec Finish D designation	Finish Description	Western Filament Designation	Ordering Description
A	Material is left in the uncoated condition	X	Specify uncoated
B	Microcrystalline Fungicidal Wax	W	Wax
C	Synthetic Elastomer Rubber	G	Synthetic elastomer
D	Individual Fibers uniformly coated with Tetrafluorocarbon (Teflon®)	LOF	Teflon - Usually also requires vinyl or synthetic elastomer coating for knot holding
E	Vinyl Chloride or Vinyl Chloride-Acetate Copolymer Coating	A	Vinyl
F	Silicone resin impregnated	S	Silicone
G	Liquid Nylon	N	Nylon

® DACRON, TEFLON, and NOMEX are DuPont registered trademarks.





western filament, inc.

Coated Cloth, Tape,
Cord, Twine and Ties

Ex. D (3/3)



Lacing Tapes

Nylon Lacing Tape

Consisting of flat braided, high tenacity nylon yarn, impregnated with microcrystalline fungicidal wax or other impregnations to meet military, NASA and industry specifications.

(A-A-52080B—Formerly MIL-T-43435, AMS 3815, AMS 3816, AMS 3817).

Western Filament Part No.	Mil Spec Size	Width Inches ±10%	Thickness Inches ±.003	Min Break Lbs.	Put-Up Yds.
150 NOF 29	1	.200	.016	135	250
80 NOF 29	2	.110	.015	80	250
50 NOF 17	3	.085	.014	50	500
35 NOF 13	4	.060	.012	25	500
25 NOF 9	5	.050	.010	15	500
15 NOF 9	--	.040	.012	15	500

Finish Coating: Specify desired finish from code letters*:

X-Uncoated (Mil Spec A); W-Wax (Mil Spec B); G-Synthetic Elastomer (Mil Spec C); A-Vinyl (Mil Spec E);

N-Liquid Nylon (Mil Spec G)

COLORS: Natural, Black, and Colors.

Polyester Lacing Tape

Consisting of flat braided, high tenacity polyester yarns, impregnated with appropriate finishes to meet military, NASA and industry specifications.

(A-A-52081B—Formerly MIL-T-43435)

Western Filament Part No.	Mil Spec Size	Width Inches ±10%	Thickness Inches ±.003	Min Break Lbs.	Put-Up Yds.
145 DOF 29	1	.200	.016	135	250
80 DOF 29	2	.110	.015	80	250
50 DOF 17	3	.085	.014	50	500
35 DOF 13	4	.060	.012	25	500
20 DOF 9	5	.050	.010	15	500
15 DOF 9	--	.040	.012	15	500

Finish Coating: Specify desired finish from code letters*:

X-Uncoated (Mil Spec A); W-Wax (Mil Spec B); G-Synthetic Elastomer (Mil Spec C); A-Vinyl (Mil Spec E)

COLORS: Natural, Black, and Colors.

Teflon® Lacing Tape

Flat braided tetrafluorocarbon (teflon). Ideal for high temperature applications. Highly resistant to fluids, fuels and chemicals. Will not outgas under critical vacuum conditions. Meets military and industry specifications.

(A-A-52082B—Formerly MIL-T-43435)

Western Filament Part No.	Mil Spec Size	Width Inches ±10%	Thickness Inches ±.003	Min Break Lbs.	Put-Up Yds.
35 TOF 29	2	.120	.011	30	250
15 TOF 13	4	.065	.011	15	500
On request	5	.025	.011	10	500

Finish Coating: Specify desired finish from code letters*:

X-Uncoated (Mil Spec A); G-Synthetic Elastomer (Mil Spec C); A-Vinyl (Mil Spec E)

COLORS: Teflon Brown.

*NOTE: When ordering, add finish code letter to end of part number. Example: 50 NOF 17 with Wax Finish = 50 NOF 17W
Example: 190 LOF 21 with synthetic elastomer and vinyl finish = 190 LOF 21G/A

® TEFLON and NOMEX are DuPont registered trademarks.

Teflon® Coated Fiberglass Lacing Tape

Individual glass fibers, uniformly coated with teflon and braided into a flat tape. This construction is ideal for high temperature applications and resists most fuels, fluid and chemicals. Will not outgas under critical vacuum conditions. Meets military and industry specifications.

(A-A-52083B—Formerly MIL-T-43435)

Western Filament Part No.	Mil Spec Size	Width Inches ±10%	Thickness Inches ±.003	Min Break Lbs.	Put-Up Yds.
275 LOF 29	1	.225	.016	200	250
190 LOF 21	2	.110	.016	100	250
100 LOF 15	3	.085	.016	75	500
60 LOF 13	4	.060	.016	50	500
50 LOF 9	5	.050	.016	—	500

Finish Coating: Specify desired finish from code letters*:

X-Uncoated (Mil Spec A); G-Synthetic Elastomer (Mil Spec C);

A-Vinyl (Mil Spec E)

COLORS: Natural (white)

Nomex® Lacing Tape

High temperature polyamide fibers braided into a flat tape and impregnated with appropriate Mil Spec finishes for improved knot holding characteristics.

(A-A-52084B—Formerly MIL-T-43435)

Western Filament Part No.	Mil Spec Size	Width Inches ±10%	Thickness Inches ±.003	Min Break Lbs.	Put-Up Yds.
130 HOF 25	1	.200	.016	85	250
70 HOF 25	2	.110	.014	50	250
40 HOF 17	3	.075	.012	35	500
30 HOF 13	4	.055	.010	25	500
20 HOF 9	--	.040	.008	15	500

Finish Coating: Specify desired finish from code letters*:

X-Uncoated (Mil Spec A); W-Wax (Mil Spec B); G-Synthetic Elastomer (Mil Spec C); A-Vinyl (Mil Spec E)

COLORS: Natural (white). Colored tracers available upon request.

Type P - Nylon Lacing Twine

Round, twisted high tenacity nylon fibers impregnated with microcrystalline fungicidal wax or other finishes to meet military (MIL-T-713) and industry specifications.

Western Filament Part No.	Mil Spec Size	Yield Yds/Lb Min.	Yield Unwaxed Min.	Min Break Lbs.	Put-Up
70 NOZ 3	1	550	650	70	1 lb.
48 NOZ 3	2	750	950	48	1 lb.
32 NOZ 3	3	1100	1400	32	1 lb.
20 NOZ 2	4	1975	2400	20	1 lb.

Finish Coating: Specify desired finish from code letters*:

X-Uncoated; W-Wax

COLORS: Natural (white) or Black.



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flat, a., adv., and n.³

SECOND EDITION
1989

(flat) Forms: 5-7 **flatte**, (9 *dial.*) **flatt**, 4- **flat**. [a. ON. *flatr* (Sw. *flat*, Da. *flad*) = OHG. *flaz*: —Teut. **flato-*. Cf. FLET.]

No certain cognates are known; connexion with OArmenian **plat-*, *plath-* (Gr. *πλατύς*, Skr. *prthú*, broad) is plausible with regard to the sense (cf. F. *plat* flat, believed to be ultimately from *πλατύς*), but the representation of OArmenian *t* or *th* by Teut. *t* (exc. when reduced from *tt* after a long vowel) is anomalous. The synonymous Ger. *flach* is unconnected.]

A. adj. I. Literal senses.

1. a. Horizontally level; without inclination. Of a seam of coal: Lying in its original plane of deposition; not tilted.

c1400 *Destr. Troy* 7326 He felle to þe flat erthe. **c1440** *Prom. Parv.* 164/1 Flatt, *bassus vel planus*. **1605** SHAKES. *Lear* III. ii. 7 Thou all-shaking Thunder, Strike flat the thicke Rotundity o' th' world. **1634** SIR T. HERBERT *Trav.* 35 Houses..flat a-top. **1634** MILTON *Comus* 375 Though sun and moon Were in the flat sea sunk. **1669** STURMY *Mariner's Mag.* VII. v. 6 As the common flat Mariners Compass doth divide the Horizon. **1805** FORSYTH *Beauties Scott.* I. 268 The strata near the Esk are termed flat seams of coal. **1842-76** GWILT *Archit.* §1903g, In India..all buildings of any importance have flat roofs. **1860** TYNDALL *Glac.* I. ix. 62, I reached the flat summit of the rock. **1879** G. C. HARLAN *Eyesight* ix. 133 A flat desk promotes a stooping position.

b. Arch. flat arch (see quot.).

1715 LEONI *Palladio's Archit.* I. xxiv, Arches..flat (those are call'd so, which are but a Section of a Circle). *Ibid.* I. xxv, Certain Arches are turn'd over the Cornices of Doors and Windows, which Workmen call Flat-Arches, to prevent the Doors and Windows from being press'd with too much weight. **1762** H. WALPOLE *Vertue's Anecd. Paint.* (1765) I. v. 114 This Saxon style begins to be defined by flat and round arches. **1872** SHIPLEY *Gloss. Eccles. Terms*, *Flat arch*. An arch in which the sides of the voussoirs are cut so as to support each other, but their ends form a straight line top and bottom.

2. Spread out, stretched or lying at full length (*esp.* on the ground); *rare*, exc. in predicative use (often quasi-advb.) with *fall*, *fling*, *lay*, *lie*, etc. **a.** Chiefly of a person: Prostrate; with the body at full length. ¶Also in phr. **a flat fall**.

c1320 *Sir Beues* 1040 A felde him flat to grounde. **1399** LANGL. *Rich. Redeles* II. 183 [The birds] ffell with her ffetheris fflat vpon þe erthe..and mercy be-souȝte. **c1440** JACOB'S *Well* 23 Sche..flatt on þe ground cryed: 'god..haue mercy on me!' **c1450** HOLLAND *Howlat* 838 The folk..Flang him flat in the fyre. **1535** COVERDALE *Isa.* xlvi. 23 They shal fall before the with their faces flat vpon the earth. **1610**

SHAKES. *Temp.* II. ii. 16, I'le fall flat, Perchance he will not minde me. **1621** LADY M. WROTH *Urania* 138 None parting from him without flat falles, or apparant losse of honour. **1657** J. SMITH *Myst. Rhet.* 56 Thus a great wound is called a scratch; a flat fall, a foile. **1719** DE FOE *Crusoe* (1840) II. xiv. 293 He laid me flat on the ground. **1726** *Adv. Capt. R. Boyle* 290, I order'd every Man..to lye flat upon their Bellies till we had received the Fire of the Enemy. **1856** KANE *Arct. Expl.* I. xxx. 411 The hunter is flat and motionless. **1860-1** F. NIGHTINGALE *Nursing* 33, I have seen a patient fall flat on the ground who was standing when his nurse came into the room. **1891** R. KIPLING *Plain Tales from Hills* 186 That night a big wind blew..the tents flat.

b. Of a building or city: Level with the ground; also, levelled, overthrown.

1560 BIBLE (Genev.) *Josh.* vi. 20 The wall fell downe flat. **1607** SHAKES. *Cor.* III. i. 204 This is the way to lay the Citie flat. **1666** SOUTH *Serm. Consecr. Bp. Rochester Serm.* (1737) I. v. 166 That Christ-Church stands so high above ground, and that the church of Westminster lies not flat upon it, is [etc.]. **1671** MILTON *P.R.* IV. 363 What ruins kingdoms, and lays cities flat.

fig. **1611** SHAKES. *Cymb.* I. iv. 23 To fortifie her iudgement, which else an easie battery might lay flat.

c. Of things usually more or less erect or elevated.

1671 MILTON *P.R.* II. 223 Cease to admire, and all her Plumes Fall flat.

fig. **1671** MILTON *Samson* 596, I feel..My hopes all flat. **1684** T. HOCKIN *God's Decrees* 333 To raise our expectations of happiness high, and then to have them fall flat and low.

†d. Of a plant: Creeping, trailing on the ground.

1578 LYTE *Dodoens* I. lxxxvi. 127 *Verbenaca supina*..in English Base or flat Veruayne.

e. Lying in close apposition; with its whole length or surface in contact irrespectively of position. *Naut.* Of a sail: **flat aback** or **aft** (see quot. 1815): said also of the vessel.

1559 W. CUNINGHAM *Cosmogr. Glasse* 86 Placing my Instrument flat on th' earth. **1581** J. MAPLET *Diall Destinie* 66 In theyr coursing they [Hares] apply their eares fast and flat to their backes. **1684** R. H. *School Recreat.* 138 Spreading your Net on the Ground smooth and flat. **1715** DESAGULIERS *Fires Impr.* 131 When it is open, it may be flat to the Chimney. **1769** FALCONER *Dict. Marine* (1789) s.v. *Aback*, Lay all flat Aback. **1796** WITHERING *Brit. Plants* IV. 76 Saucers dark green, lying flat on the leaves. **1815** Falconer's *Dict. Marine* (ed. Burney), *Flat aft* is the situation of the sails when their surfaces are pressed aft against the mast by the force of the wind. **1840** R. H. DANA *Bef. Mast* vi, We

found the vessel hove flat aback. **1885** H. J. STONOR in *Law Times* LXXX. 119/1 The ladder was standing flat against the side wall.

f. Paper-making. Packed without folding.

1890 JACOBI *Printing* xxxi. 249 A ream may be either 'flat', 'folded', or 'lapped'.

g. Of the hand: Extended, not clenched.

1847 TENNYSON *Princ.* II. 345 The child Push'd her flat hand against his face and laugh'd. **1859** — *Enid* 1565 The brute Earl..unknightly, with flat hand. However lightly, smote her on the cheek.

h. Of relatively small curvature or inclination. *spec.* Of a golf-club: having the head at a very obtuse angle to the shaft; of a swing of the club: not upright, oblique.

1857 H. B. FARNIE *Golfer's Man.* (1947) v. 27 Regarding the lie of a club for effecting distance, whether it should be flat or upright, little can be said..the rule being, the longer the club, the flatter the lie. **1887** Jamieson's *Scot. Dict.* Suppl., *Flat*, adj. A term in golfing, applied to a club of which the head is at a very obtuse angle to the shaft. **1888** Lockwood's *Dict. Mech. Engin.*, *Flat sweep*, a flat sweep or curve signifies one that is relatively of less curvature than others with which it may be compared. **1909** P. A. VAILE *Mod. Golf* i. 17 [One who plays an upright swing] will keep longer in the line of the ball's flight to the hole, and in the plane of its flight, than one who stands away from the ball and uses a flat swing. *Ibid.* iii. 32 A club with a lie which is too flat.

3. Without curvature or projection of surface. **a. Of land,** the face of the country: Plain, level; not hilly or undulating.

c1440 [see 1]. **1553** BRENDE Q. *Curtius* IV. 49, A Nacion..inhabiting vpon a flat shore. **1610** SHAKES. *Temp.* IV. i. 63 Thy..flat Medes thetchd with Stouer, them [Sheepe] to keepe. **1673** TEMPLE *Observ. United Prov.* Wks. 1731 I. 44 The whole Province of Holland is generally flat. **1748** *Relat. Earthq. Lima* 2 This Town was built on a low flat Point of Land. **1838** MURRAY'S *Hand-bk. N. Germ.* 71 High dykes..protect the flat country from inundations. **1859** JEPHSON *Brittany* xii. 202 The country became more and more flat.

b. Of a surface: Without curvature, indentation, or protuberance; plane, level.

1551 T. WILSON *Logike* (1580) 37 When thei se the ground beaten flat round about. **1559** CUNNINGHAM *Cosmogr. Glasse* 47 As touchyng your opinion, that th' Earth is flat, I will prove it to be rounde. **1585** T. WASHINGTON tr. *Nicholay's Voy.* IV. xxxvi. 159b, Not any carved images of saints..but on flat pictures painted. **1632** LITHGOW *Trav.* VI. 262 The flat face of the Rocke. **1703** MOXON *Mech. Exerc.* 268 That makes the Moulding flatter, this more circular. **1812-6** J. SMITH *Panorama Sc. & Art* I. 32 To grind one surface perfectly flat, it is..necessary to grind three at the same time. **1824** R. STUART *Hist. Steam Engine* 179 The flat face to which the blocks are ground. **1882** SYD. SOC. *Lex., Chest, flat.* A

chest which has lost its rounded front.

c. Of the face or nose.

c1400 *Ywaine & Gaw.* 259 His face was ful brade & flat. **1560** *BIBLE* (Genev.) *Lev.* xxi. 18 A man..that hath a flat nose. **1607** *SHAKES. Timon* IV. iii. 158 Downe with the Nose, Downe with it flat, take the Bridge quite away. **1697** *W. DAMPIER Voy.* I. 325 Their Faces are oval, their Foreheads flat. **1829** *LYTTON Devereux* II. iii, A very flat, ill-favoured countenance. **1836** *W. IRVING Astoria* II. 281 Their noses are broad and flat at top.

d. flat numbers: those corresponding to plane surfaces, i.e. numbers composed of two factors.

1557 *RECORDE Whetst.* Cijj, Superficiall numbers, or Flatte numbers.

e. flat side (e.g. of a sword): opposed to the *edge*. Also **to turn (a sword) flat**.

a1440 *Sir Eglam.* 1240 Syr Egylamowre turnyd hys swerde flatt. **1727** *W. SNELGRAVE Guinea & Slave Trade* (1734) 236 Lifted up his broad Sword, and gave me a Blow on the Shoulder with the flat side of it. **1832** *G. R. PORTER Porcelain & Gl.* 226 The flat side..is to be turned towards the observer. **1835** *LYTTON Rienzi* I. iii, Touching the smith with the flat side of his sword.

f. Having little projection from the adjacent surface. Rarely const. *to*.

1728 *POPE Dunci.* II. 43 With pert flat eyes she windowed well its head. **1865** *CARLYLE Fredk. Gr.* V. XIV. v. 201 It can now be discovered..by any eyes, however flat to the head.

g. flat tyre (U.S. *tire*): (a) a deflated or punctured tyre; also *ellipt.* as **flat**; (b) U.S. a dull and spiritless person. Also **flat wheel**.

1923 *WODEHOUSE Inimitable Jeeves* xvi. 218 I'm bound to say it isn't very often I find my own existence getting a flat tyre. **1925** *H. L. FOSTER Trop. Tramp Tourists* xvi. 300 You think you're the berries, don't you? Well, you might have been once, but you're a flat-tire these days! You can't make the grade! **1927** *New Republic* 26 Jan. 277/2 He's a flat tire. **1929** 'C. WALT' *Love in Chicago* xv. 211 Stopping at the crossroads to see if I had a flat. **1934** *J. M. CAIN Postman always rings Twice* i. 12, I was in the filling station, fixing flats. **1942** 'N. SHUTE' *Pied Piper* 81 The driver wrestled to jack up the bus and get the flat wheel off.

h. Of the frequency response of an amplifier or other electronic device: uniform (over a certain range of frequencies); of a device: having such a response; amplifying, attenuating, or reproducing equally signals of all frequencies.

1926 *Encycl. Brit.* XXVI. 281/2 A properly designed system is ‘flat’, i.e., indiscriminatory, over a sufficiently wide auditory band. **1949** FRAYNE & WOLFE *Elem. Sound Recording* xxix. 604 With this machine a frequency response flat within 2 db is obtained from 30 to 15,000 cycles. **1958** J. TALL *Techn. Magn. Recording* vi. 86 A flat amplifier is one that amplifies all frequencies equally. **1970** J. EARL *Tuners & Amplifiers* ii. 57 Trimmers across the bass and treble tone controls..make it possible to balance them for a ‘flat’ response when the controls are at the centre setting.

4. transf. **a.** in *Painting*. Without appearance of relief or projection. **flat tint**: one of uniform depth or shade.

1755 JOHNSON, *Flat*, without relief, without prominence of the figures. **1821** CRAIG *Lect. Drawing* ii. 95 Throwing every mass of shadow into a flat tint. *Ibid.* iii. 153 The pictures..were in their general appearance, flat, insipid, and uninteresting. **1859** GULLICK & TIMBS *Paint*. 18 The impossibility of spreading a flat tint on the vellum. **1879** Cassell's *Techn. Educ.* III. 186 Pictures..flat, and deficient in light and shade, or brilliance.

b. Engraving. Wanting in sharpness; applied to a pull or impression of a plate which has received only the flat impression of the press without the overlay used to develop light and shade.

1888 C. T. JACOBI *Printers' Voc.* 44 *Flat*, an expression used to indicate excessive flatness in an illustration owing to want of light and shade in overlaying. **1888** Flat pull [see sense 15]. **1897** SINGER & STRANG *Etching* 175 A ‘flat’ proof of a block as it comes from the photo~engraver generally shows itself to be in need of some touching up.

c. Of paint, lacquer, or varnish: lustreless, dull. (Cf. **FLAT a.**, etc. C. 12, **FLAT v.²** 8a, **FLATTED ppl. a. 5.**)

1896 *N.E.D.* s.v. *flat v.²* 8a, To cover (a surface) with flat, i.e. lustreless, paint. **1935** H. R. SIMONDS *Finishing Metal Products* xxv. 263 There may be gloss or flat paint, or an intermediate semigloss frequently known as egg-shell paint. **1940** R. C. MARTIN *Lacquer & Synthetic Enamel Finishes* xii. 370 Clear or flat lacquers may then be used to a finish. **1951** H. W. CHATFIELD *Gloss. Terms Paint Trades* 115 Flat varnishes, lacquers, enamels, etc. **1953, 1958** [see **EGG-SHELL c.**] **1971** *Sci. Amer.* Sept. 224/3 Coat the inside of the box with flat black paint.

d. Photogr. Wanting in contrast.

1901 G. E. BROWN *Finishing Negative* vii. 66 Increasing contrasts..gives a ‘snap’ to otherwise flat negatives which is often very welcome. **1923** *Kodak Mag.* Mar. 36 From the negative least developed we shall get a print flat and grey with little difference between high light and shadow. **1953** T. L. J. BENTLEY *Man. Miniat. Camera* (ed. 4) viii. 113 A negative may be so flat and deficient in printing density that straightforward printing will not yield an enlargement of acceptable quality.

5. a. With additional notion: Having a broad level surface and little thickness. Of a foot: Touching the ground with the whole surface; but little arched.

c1430 *Two Cookery-bks.* 29 Serue hem in almost flatte. **1530** PALSGR. 312/2 Flatte as a thyng is that is brode. **1577-87** HARRISON *England* III. iii. (1878) III. 224 Of fishes..I find fiue sorts, the flat, [etc.]. **1597** GERARDE *Herbal* 58 Flat wheate is..bearded and bordered with very rough and sharpe ailes, wherein consisteth the difference. **1613-39** I. JONES in Leoni *Palladio's Archit.* (1742) II. 44 Those great Pilasters in the Angle of the inside of the Temple are too flat. **1632** LITHGOW *Trav.* VI. 247 They weare on their heads flat round Caps. **1697** W. DAMPIER *Voy.* I. 49 The Booby is a Water-fowl..her Feet are flat like a Ducks Feet. **a1721** J. KEILL *Maupertuis' Diss.* (1734) 65 These conjectures concerning flat Stars..are rather the stronger. **1769** MRS. RAFFALD *Eng. Housekpr.* (1778) 303 To collar Flat Ribs of Beef. **1840** LARDNER *Geom.* 34 This ruler consists of a flat piece of wood with a straight edge. **1859-74** TENNYSON *Vivien* 348 May this hard earth cleave..and close again, and nip me flat, If I be such a traitress. **1888** LOCKWOOD'S *DICT. MECH. ENG.*, *Flat File.*..is either a tapered or a parallel file. **1882** QUAIN *Anat.* (ed. 9) I. 8 Tabular or flat bones, like the scapula, ilium, and the bones forming the roof and sides of the skull.

†b. Of false dice: Broad and thin. *Obs.*

c1550 *Dice-Play* Ajb, A bale of flatte synke deuxis..A bale of flat cater trees. **1711** PUCKLE *Club* 30 Flats. Note, Dice flatter than they are long, to throw Trays and Quaters.

c. Of a blade, as opposed to 'three-edged'.

d. Phrases: *flat as a flawn, flounder, pancake* (see those ns.).

e. Of a vessel: Wide and shallow.

1471 *Bury Wills* (Camden) 242, I peluem laton voc' a flat basyn. **1492** *Ibid.* 75 My flatte gylte cuppe. **1533** *Will of C. Bedford* in *Weaver Wells Wills* 27 John Bys the yonger a fflat cuppe of sylver. **1552** HULOET, Flatte bole for wine, *ecpatala*. **1611** BIBLE *Lev.* ii. 5 A meate offering baken in a panne [*marg.* on a flat plate].

II. Senses of figurative origin.

6. a. Unrelieved by conditions or qualifications; absolute, downright, unqualified, plain; peremptory. Now chiefly of a denial, contradiction, etc., and in Shaksperian phrases, *flat blasphemy, burglary*.

1551 T. WILSON *Logike* (1567) 61a, The aunswerer must still vse flatte deniyng. **1577** J. NORTHBROOKE *Dicing* (1843) 121 Whosoeuer taketh and keepeth the mony of another..sheweth himself a flat theefe. **1586** B. YOUNG *Guazzo's Civ. Conv.* IV. 183 If I would tel you a flat lie, I wold say no. **1592** GREENE *Upst. Courtier* in *Harl. Misc.* (Malk.) II. 248 Why, Sir, to be flat with you, you liue by

your legges. **1603** SHAKES. *Meas. for M.* II. ii. 131 That in the Captaine's but a chollerick word, Which in the souldier is flat blasphemie. **1611** BEAUM. & FL. *King & No King* IV. iii, This is my flat opinion, which I'll die in. **1614** BP. HALL *Recoll. Treat.* 864 Who knowes not, that S. Homer, and S. Virgil are flat for it? **1641** MILTON *Ch. Govt.* I. (1851) 23 His Son Constantius prov'd a flat Arian. **1685** BAXTER *Paraphr. N.T. 1 Cor.* vii. 12, 13, I bring you not this as a flat command of Christ, but as my best Advice. **1699** BENTLEY *Phal.* 304 A piece of flat Nonsense. **1713** SWIFT *Apollo outwitted* vii, She gave no flat denial. **1788** T. JEFFERSON *Writ.* (1859) II. 551 In flat contradiction to their Arret of December last. **1839** KEIGHTLEY *Hist. Eng.* I. 97 He claimed to be put in possession..but met with a flat refusal. **1871** MORLEY *Crit. Misc.* Ser. I. 163 A flat impostor. **1891** R. KIPLING *Plain Tales from Hills* 212 It's flat, flagrant disobedience!

b. In the conclusive expression, *that's flat* (a) formerly = that's the absolute, undeniable truth; (b) a defiant expression of one's final resolve or determination.

1588 SHAKES. *L.L.L.* III. i. 102 The Boy hath sold him a bargaine, a Goose, that's flat **1596** — *I Hen. IV.* iv. ii. 43. **1665** *Surv. Aff. Netherl.* 120 Its the greatest Bogg of Europe..that's flat. **1716** ADDISON *Drummer* I. i, I'll give Madam warning, that's flat. **1852** SMEDLEY *L. Arundel* i. 15 'I won't, then, that's flat', exclaimed Rachel.

c. Of a calm: Complete, 'dead'.

1651 HOWELL *Venice* 119 The wind..became..a flat calm. **1697** W. DAMPIER *Voy.* I. 415 It fell flat calm. **1880** A. BRASSEY *Sunshine & Storm* 34 Half an hour later it was a flat calm.

d. Impecunious, penniless. *U.S. slang.* (Cf. *flat broke* s.v. **FLAT** *adv.* 2.)

1833 *Sk. & Eccentr. D. Crockett* (1834) 60 Retiring to bed, comfortably situated, he awoke next morning flat without a dollar. **1930** *Times Lit. Suppl.* 4 Sept. 698/2 Satisfying his desires freely when he can, starving when he is 'flat'.

e. to leave (a person) *flat*, to 'drop' suddenly and completely; to go away from.

1902 G. V. HOBART *It's up to You* ii. 37 Then they both chuckled and left me flat. **1919** in *Saucy Stories* Aug. 83/2 She got up enough spunk to leave him flat on Broadway. Lost him in the crowd... Refused to see him when he showed up. **1930** WODEHOUSE *Very Good, Jeeves!* iii. 85 He buzzed off, leaving me flat. **1942** T. RATTIGAN *Flare Path* I. i. 121 You meant my Johnny's going to leave me flat the minute the war's over.

7. Wanting in points of attraction and interest; prosaic, dull, uninteresting, lifeless, monotonous, insipid. Sometimes with allusion to sense 10. **a.** of composition, discourse, a joke, etc. Also of a person with reference to his composition, conversation, etc.

1573 G. HARVEY *Letter-bk.* (Camden) 20 Mi over flat and homeli kind of writing. **1656** BP. HALL

Occas. Med. (1851) 63 They have proved..poor and flat in all other subjects. **1662** PEPYS *Diary* 11 May, A dull, flat Presbiter preached. **1711** ADDISON *Spect.* No. 124 ¶2 We should complain of many flat Expressions. **1712** W. ROGERS *Voy. Introd.* 16 Such strange Stories, as make the Voyages of those who come after..to look flat and insipid. **1806-7** J. BERESFORD *Miseries Hum. Life* (1826) VII. xxx, The longest story of the flattest proser that ever droned. **1822** HAZLITT *Table-t. Ser. II. x.* (1869) 204 The flattest thing of yours they can find. **1861** M. PATTISON *Ess.* (1889) I. 31 A rather flat treatment of trite themes. **1866** G. MACDONALD *Ann. Q. Neighb.* xiii. (1878) 254 I am rather a flat teller of stories. **1889** *County x.* in *Cornhill Mag.* Mar., He is always appreciative of the flattest joke.

b. of one's circumstances, surroundings, etc.

1602 SHAKES. *Ham.* I. ii. 133 How weary, stale, flat, and vnprofitable Seemes to me all the vses of this world. **1706** ATTERBURY *Funeral Serm.* 8 All Earthly Satisfactions must needs..grow flat and unsavory. **1798** COLERIDGE *Fears in Solitude* 67 How flat and wearisome they feel their trade. **1848** MRS. GASKELL *Mary Barton* xvii, It seems so flat to be left behind. **1884** QUEEN VICTORIA *More Leaves* 25 It seemed to strike me much less than when I first saw it, as all is flat now.

c. to fall flat (said of a composition, discourse, etc.): to prove unattractive, uninteresting, or ineffective; to fail in exciting applause or approval.

1841 MACAULAY *W. Hastings* (1880) 654 The best written defence must have fallen flat. **1860** DICKENS *Lett.* (1880) II. 125 All my news falls flat. **1885** C. L. PIRKIS *Lady Lovelace* II. xxv. 80 The haranguing..fell as flat as the reasoning.

8. Deficient in sense or mental vigour; stupid, dull, slow-witted.

1599 SHAKES. *Hen. V.* Prol. 9 Pardon, Gentles all: The flat vnraysed Spirits, that hath dar'd..to bring forth So great an Obiect. **1601** SIR J. OGLE *Parlie at Ostend* in Sir F. Vere *Comm.* 158 Nor do I believe that..any of you judge me so flat, or so stupid. **a1680** BUTLER *Rem.* (1759) I. 132 No dull Idolater was ere so flat In Things of deep and solid Weight. **1878** SEELEY *Stein* I. 312, I look for nothing from empty, slow, flat people.

9. a. Wanting in energy and spirit; lifeless, dull. Also, out of spirits, low, dejected, depressed.

1602 SHAKES. *Ham.* IV. vii. 31 You must not thinke That we are made of stiffe, so flat, and dull, That, [etc.]. **1642** DK. NEWCASTLE *Lett.* in *Life* (1886) 330 The town will not admit of me..so I am very flat and out of countenance here. **c1680** BEVERIDGE *Serm.* (1729) I. 37 Lest he should grow flat in his devotions. **1801** MED. *Jrnl.* V. 324 Her spirits were dull and flat. **1805** LAMB *Lett.* (1888) I. 213, I am now calm, but sadly taken down and flat. **1844** ALB. SMITH *Adv. Mr. Ledbury* xxiii. (1886) 71 The audience..not witnessing any situation half so comic as the one they had just seen, were proportionately flat.

b. Of trade, etc.: Depressed, dull, inactive.

1831 *Lincoln Herald* 30 Dec. 1 The trade for barley is exceedingly flat. **1894** *Times* (weekly ed.) 9 Feb. 123/2 Tallow trade, flat, but prices unchanged. **1894** *Daily News* 1 June 3/5 A flat market for maize.

c. Of an electric battery: run down, (fully) discharged.

1951 *Autocar* 9 Nov. 1445/2 After five hundred miles of touring I found myself with a completely flat battery. **1961** *Which?* Apr. 89/1 If this discharging process goes on long enough, the battery will be left flat. **1969** N. FREELING *Tsing-Boum* ii. 17 The car battery is flat and I've got to charge it. **1978** B. FRANCIS *AA Car Duffer's Guide* 42/1 A bloke rings up saying he had a flat battery.

10. Of drink, etc.: That has lost its flavour or sharpness; dead, insipid, stale.

1607 HEYWOOD *Woman kilde* Epil., The wine..drunk too flat. **1626** BACON *Sylva* §367 Spirit of Wine burned..tasteth nothing so hot in the Mouth..but flat and dead. **1708** J. PHILIPS *Cyder* i. 49 Fruit..to the Tongue inelegant and flat. **1772** PRIESTLEY in *Phil. Trans.* LXII. 154 When..cyder is become flat or dead. **1861** GEO. ELIOT *Silas M.* 20 Tankards sending forth a scent of flat ale.

11. a. Of sound, a resonant instrument, a voice: Not clear and sharp; dead, dull. Also in Combs., as *flat-sounding*, *-vowelled*.

1626 BACON *Sylva* §154 If..you stop the Holes of a Hawkes Bell, it will make no Ring, but a flat noise, or Rattle. **a1663** SANDERSON in *Treas. Dav.* Ps. cl. 5 The cymbal will be flat, it will have no life or spirit in it. **1718** PRIOR *Pleasure* 501 Too flat I thought this voice, and that too shrill. **1831** BREWSTER *Nat. Magic* ix. (1833) 217 The..variety of sounds..produced by the report of his fowling-piece. Sometimes they are flat and prolonged, at other times short and sharp. **1920** 'K. MANSFIELD' *Lett.* (1928) II. 3 His *flat-sounding* voice. **1936** 'M. FRANKLIN' *All that Swagger* i. 10 The haw-haw, flat-vowelled Public School English.

b. Music. Of a note or singer: Relatively low in pitch; below the regular or true pitch. **B, D, E, etc. flat:** a semitone lower than B, D, E, etc. Of an interval or scale: = MINOR.

1591 SHAKES. *Two Gent.* i. ii. 93 Now you are too flat; And marre the concord, with too harsh a descant. **1597** MORLEY *Introd. Mus.* 3, b..signifying the halfe note and flatt singing. **1609** DOULAND *Ornith. Microl.* 15 To sing *fa* in a flat Scale. **1613** DRUMMOND OF HAWTHORNDEN *Poems* 144 Like Arions Harpe Now delicately flat, now sweetly sharp. **1674** PLAYFORD *Skill Mus.* ii. 95 A flat Third lower, is C *fa ut*. **1678** PHILLIPS s.v. *Cliff*, The B-Cliff..being only to shew when Notes are to be sung flat. **1691** RAY *Creation* 204 Cartilages and Muscles to contract or dilate it [the windpipe] as we would have our Voice Flat or Sharp. **1773** BARRINGTON in *Phil. Trans.* LXIII. 270 The flat third is plaintive. **1874** HELPS *Soc. Press.* iii. 46 For the sixth time he hears C flat instead of C sharp played. **1875** OUSELEY *Harmony* v. 67 All the fifths in tuning keyed instruments, are tuned a little flatter than perfection.

c. quasi-adv.

Mod. She has a tendency to sing flat.

12. Gram. †a. Of an accent, a syllable: Unstressed.

1589 PUTTENHAM *Eng. Poesie* II. xiii. (Arb.) 135 [Re] being the first sillable, passing obscurely away with a flat accent is short. **1612** BRINSLEY *Pos. Parts* (1669) 94 Every Noun Substantive Commune increasing flat or short in the Genitive case, is the Masculine Gender. What mean you by this, to increase flat? *A.* To have the last syllable but one pressed down flat in the pronouncing.

b. Phonetics. Of a consonant: Voiced, i.e. uttered with vibration of the vocal chords, e.g. *b, d, v*, etc., as opposed to breath, e.g. *p, t, f*, etc. Of a vowel: (see quot. 1934³). Also, of a sound: characterized by the downward shift of higher frequencies.

1874 R. MORRIS *Hist. Eng. Gram.* §54 B and d, &c. are said to be soft or flat, while p and t, &c. are called hard or sharp consonants. **1901** H. SWEET in *Maître Phonétique* 145, if wij dis'tingwiſ bi'twijn 'mikſt' pə'ziſen ən 'flæt' ſeip əv ðə təŋ, wij ſəd næfərəli kɔ:l ðə ðrij njuw ſiəriz bæk-flæt bæk-mikſt frænt-mikſt. **1934** H. C. WYLD in *S.P.E. Tract* XXXIX. 607 Another long vowel [ã] (low-flat-tense). *Ibid.* 608 This vowel..is the mid-flat-tense. *Ibid.* 609 The tongue may be so used that neither back nor front predominates, but the whole tongue, which lies evenly in the mouth, is raised or lowered. Vowels so formed are called 'mixed' by Sweet, but I owe to him also the term 'flat' which I prefer as more descriptive. The vowel [ã] in *bird* is low-flat. **1952** R. JAKOBSON et al. *Prelim. Speech Analysis* 31 Flat vs. Plain...Flattening manifests itself by a downward shift of a set of formants.

c. Gram. Not distinguished by a characteristic ending, as an adverb which has the same form as an adjective or substantive, or a substantive used as an adjective.

Flat adverbs of modern English often go back to an Old English form ending in *-e*.

1871 J. EARLE *Philol. Eng. Tongue* 361 The Flat Adverb is simply a substantive or an adjective placed in an adverbial position. **1901** GREENOUGH & KITTREDGE *Words* (1902) 199 Not all of our 'flat adverbs' actually go back to such *-ē* forms. **1965** *English Studies* XLVI. 356 The 'flat-adverbs' (like e.g. *fast*).

13. a. Stock-exchange (U.S.) Stock is said to be borrowed *flat*, when the lender allows no interest on the money he takes as security for it (*Cent. and Standard Dicts.*).

1841 N.Y. *Standard* Jan. (Th.), *Flat*, without interest, in brokers' slang. **1870** *Congress. Globe* 25 Jan. 733/2 [Certificates] have been sold 'flat'..that is to say, without taking the interest into account. **1870** J. K. MEDBERY *Men & Myst. Wall St.* 61 Stock can almost always be obtained by borrowers, either flat, i.e. with no interest on either side, or with interest at market rates for the money advanced. **1885**

Harper's Mag. Nov. 843/2 To lend 'flat' means without interest.

b. Comm. Unvarying, fixed, uniform; of a standard amount; not varying with changed conditions; without excess or diminution for particular cases. Also *quasi-adv.*

1898 *Engineering Mag.* XVI. 38 Three costs are kept,—the flat cost (including labor and material only), the factory cost (factory expense added to flat cost), and total cost (including all expenses of every kind). **1902** *Encycl. Brit.* XXXII. 163/2 The statistics as to the street railway earnings in America are based upon the universal practice there of charging a 'flat' 5 cent fare for the whole trip. **1903** *Westm. Gaz.* 30 July 10/2 The Tube Railway, on which there was what was known as a 'flat fare'—that was, a fare of twopence for the whole way. **1907** *N.Y. Even. Post* (semi-weekly ed.) 11 Feb. 4 A company..will take in exactly as much money if the whole lot pay fare at two cents flat. **1908** *Daily Chron.* 21 Feb. 2/6 They had found..that the 'flat' rate system—the fixed annual rate—was unsound. **1920** *Westm. Gaz.* 1 Apr. 4/2 There..ought not to be any flat rate for all classes of horse-drawn vehicles. **1928** *Britain's Industr. Future (Liberal Ind. Inq.)* III. xvi. 193 The majority of workers are paid at flat time-rates. **1950** T. H. MARSHALL *Citizenship & Social Class* 55 Flat-rate benefits do not reduce the gaps between different incomes. **1958** *Ann. Reg.* 1957 92 Labour offered a flat-rate reduction of £100 to every taxpayer. **1963** *Times* 24 May p. vii/3 The 'sixpenny tube', or to give it its correct name—the flat fare—if adopted by London Transport, would lead straight to bankruptcy.

14. Comb. a. In parasynthetic adjs., as *flat-backed, -billed, -breasted, -browed, -capped, -chested, coated* (of animals), *-crowned, -cut, -decked, -edged, -ended, -faced, -floored, -handled, -heeled, -hoofed, -leaved, -mouthed, -pearled, -pointed, -ribbed, -roofed, -soled, -stemmed, -surfaced, -toothed, -topped, -visaged.*

1688 R. HOLME *Armoury* II. ix. 185/1 *Flat Backed, when it [Grey-Hound] is even between the neck, and spaces.

1646 SIR T. BROWNE *Pseud. Ep.* III. xix. 154 *Flat-bild birds. **1688** J. CLAYTON in *Phil. Trans.* XVII. 990 All Flat-bill'd Birds that groped for their Meat.

1667 N. FAIRFAX *ibid.* II. 548 This Woman was as *flat-breasted as a Man.

1838 DICKENS *O. Twist* viii, A snub-nosed, *flat-browed..boy.

1947 J. MULGAN *Report on Experience* 18 Tenement houses crowded with pale, *flat-capped working men. **1961** H. E. BATES *Now sleeps Crimson Petal* 25 A muscular flat-capped skittles player who drove a brewers' dray.

1771 SMOLLETT *Humph. Cl.* Wks. 1806 VI. 63 She is..awkward, *flat-chested, and stooping. **1929** Flat-chested [see CHEMICALIZE v.]. **1939** M. DICKENS *One Pair of Hands* vi. 97 It sounds so governessy and flat-chested.

1872 'STONEHENGE' *Dogs Brit. Isl.* (ed. 2) 89 The *flat-coated or short-coated small St. John's or Labrador breed [of retriever]. **1902** C. J. CORNISH *Naturalist on Thames* 109 Our sheep..their wild ancestors, the active and flat-coated animals which still feed on the stony mountain-tops. **1948** C. L. B. HUBBARD *Dogs in Brit.* 227 Another of the lesser-known varieties is the Flat-coated Retriever.

1664 WOOD *Life* (Oxf. Hist. Soc.) II. 8 For a new hat *flat-croun'd 7*s.* 6*d.*

1922 JOYCE *Ulysses* 178 A *flatcut suit of herringbone tweed.

1884 J. COLBORNE *Hicks Pasha* 97 A *flat-decked vessel.

1923 D. H. LAWRENCE *Kangaroo* xiv. 311 They were walking home in a whirl of the coldest, most *flat-edged wind they had ever known.

1859 *Handbk. Turning* 97 A fine *flat-ended tool.

1859 HELPS *Friends in C.* Ser. II. II. viii. 143 The Sea..a melancholy *flat-faced thing.

1867 SMYTH *Sailor's Word-bk.* 304 *Flat-floored boats.

1676 *Lond. Gaz.* No. 1059/4 *Flat-handled Silver Spoons.

1725 DE FOE *Voy. round World* (1840) 267 Shoes *flat-heeled. **1890** KIPLING *Barrack-room Ballads* (1892) 183 The hand of every honest man flat-heeled across your mouth.

1697 *Lond. Gaz.* No. 3301/4 A..punch Horse..*flat Hoofed.

1926 D. H. LAWRENCE *Sun* i. 5 The *flat-leaved cactus called prickly pear.

?**a1400** Morte Arth. 1088 *Fflatt mowthede as a fluke.

1924 E. SITWELL *Sleeping Beauty* vi. 28 Upon the *flat-pearled and fantastic shore.

1710 J. HARRIS *Lex. Techn.* II. *Flat-pointed Nails.

1684 *Lond. Gaz.* No. 1908/4 One Dark brown Gelding..a little *flat Ribb'd. **1688** R. HOLME *Armoury* II. ix. 185/2 Flat Ribbed, is when the both side Ribbs [of a Grey-Hound] cling and are near to gather.

1598 HAKLUYT *Voy.* III. 391 Their houses are *flat-rooffed. **1847** DISRAELI *Tancred* IV. xii, Flat-roofed villages nestle amid groves of mulberry trees.

1662 J. DAVIES tr. *Olearius' Voy. Ambass.* 377 Their shooes are low and *flat-soal'd. **1849** JAMES *Woodman* ix, The..tread of the abbess in her flat-soled sandal.

1861 MISS PRATT *Flower. Pl.* VI. 89 *Flat-stemmed Meadow grass.

1794 SULLIVAN *View Nat.* I. 193 Place a *flat-surfaced bottle empty on its side.

1766 PENNANT *Zool.* (1769) III. 9 The fossil tooth of..some *flat-toothed fish.

1862 ANSTED *Channel Isl.* I. ii. (ed. 2) 32 The southern islet is..*flat-topped.

1774 CURTIS in *Phil. Trans.* LXIV. 383 They are *flat-visaged.

b. With pr. pple. forming adj., as *flat-lying*.

1765 A. DICKSON *Treat. Agric.* (ed. 2) 284 Low flat-lying land. 1949 E. POUND *Pisan Cantos* lxxiv. 24 A nice little town in the Tyrol in a wide flat-lying valley. 1965 G. J. WILLIAMS *Econ. Geol. N.Z.* v. 55/2 (*caption*) Flat-lying lodes of the Golden Point group.

c. With *adjs.*, as ***flat-icy, -sleek***.

1923 D. H. LAWRENCE *Kangaroo* xiv. 308 So, in the *flat-icy wind..they crouched.

1922 E. SITWELL *Façade* 11 And finer Their black hair seemed (*flat-sleek to see) Than the leaves of the springing Bohea.

15. Special comb., as **flat-arch** (see 1b); **flat-back**, (a) (see quot. 1888); (b) *slang*, a bed bug (Farmer); (c) a book whose back is flat when the book is closed; (d) various other technical senses (see quot.); †**flat-bean**, a name for some species of *Lupinus*; **flat bed** [BED n. 11], a bed or frame with a horizontal surface; *spec.* (freq. *attrib.* or as *adj.*): (a) a printing machine with a flat printing surface; (b) a trailer with no top or sides; (c) on a sewing machine, the flat surface on which the fabric rests; **flat-bedded a.** (*Geol.*), having a naturally plane cleavage; **flat-bill**, a name for certain birds having broad, flat bills, e.g. a bird of the genus *Platyrhynchus*; **flat-body** (*Entom.*), the name of a moth; **flat bug**, any of the family Aradidae of bugs, which are very flat and live chiefly under the bark of trees; **flat candle**, a candle used in a flat-candlestick; **flat candlestick**, one with a broad stand and short stem; a bedroom-candlestick; **flat-car** (*U.S.*), ‘a railroad-car consisting of a platform without sides or top; a platform-car’ (*Cent. Dict.*); **flat chasing** (see quot. 1960); also **flat-chased ppl. a.** [CHASED *ppl. a.²*]; **flat chisel**, a smoothing chisel; **flat-coil**, a pond-snail of the genus *Planorbis*, having its shell coiled in a plane; so **flat-coiled** *ppl. a.*; **flat-compounded a.**, *Electr. Engin.* [COMPOUND v. 2f] (see quot. 1940); **flat-crown** (*Arch.*) (a) = CORONA 4; (b) a popular name for two trees, *Albizzia gummosa* and *A. adianthifolia*, both found in southern Africa; **flat-earth a.**, of or pertaining to the theory that the earth is flat; so **flat-earther, flat-earth-man**; **flat-feet** (see quot.); **flat-fell seam** (see quot. 1964); **flat field Photogr.** (see quot. 1904 and 1918); **flat film Photogr.**, film on a card or sheet (opp. *roll film*); also *ellipt.* as *flat*; **flat finish** (see quot. 1940); **flat-four a.**, of a four-cylinder engine in which two cylinders are placed on each side of the crankshaft and all the cylinders are parallel to the ground; **flat-hammer**, ‘the hammer first used by the gold-beater in swaging out a pile of quartiers or pieces of gold ribbon’ (Knight); †**flat-house**, ? a sheriff’s office, a roofed shed for impounded animals; **flat impression** (*Printing*), see *flat-pull*; **flat joint**, (a) *Building* (see quot. 1904); (b) *U.S. slang* (see quot. 1914); **flat-knitting**, a knitting process in which the needles on which the yarn is spun are set in a straight line; so **flat-knit a.**, of a fabric made by flat-knitting; †**flat-lap**, a term describing a particular posture of the leaves of a plant (see quot.); **flat-lead**, sheet lead; **flat-minded a.** (see quot. 1928); **flat move** (*slang*: see quot.); **flat nail** (see quot.); **flat-orchil**, a kind of lichen, *Roccella fusiformis*, used as a

dye (Ogilvie 18..); **flat pea**: see PEA¹ 3; **flat-piece**, a shallow drinking-cup; **flat pliers**, pliers having the holding part or jaws flat; **flat pointing Building** (see quot. 1940); hence **flat-joint pointing**; **flat-pressing** (see quot.); **flat pull Printing** (see quot.); **flat race**, a race over clear and level ground, as opposed to hurdle-racing or steeple-chasing; whence **flat-racer, -racing**; **flat-rail**, ‘a railroad rail consisting of a simple flat bar spiked to a longitudinal sleeper’ (Knight); **flat-ring** *a.*, denoting an armature taking the form of a flat ring; **flat rod** (see quot.); **flat-rolled** *ppl. a.*, formed by rolling between smooth cylindrical rollers; **flat-roof** *v. trans.*, to cover with a flat roof; **flat rope** (see quot.); **flat-sawn** *a.* (see quot. 1957); **flat screen**, (*a*) a television screen that is flat rather than gently curved; usu. *attrib.* with hyphen; (*b*) a computer display that is thin in relation to its two visible dimensions; **flat seam** *Naut.* (see quot.); **flat-sheets** *pl. (a)* *Mining* (see quot.); (*b*) *Geol.* and *Mining*, ‘thin beds, flat veins, or blanket veins or deposits of some mineral usually different from the adjacent layers; often contact-deposits’ (*Standard Dict.*); **flat silver** *N. Amer.*, knives, forks, spoons, and other eating or serving utensils made of or plated with silver (Webster 1961); **flat-skein work** *Basket-making* (see quot. 1943 and SKEIN *n.*² 1); **flat slab Building**, a concrete slab reinforced in two or more directions to enable it to be supported by columns, etc., without the use of beams or girders; also *attrib.*, as **flat-slab construction**; **flat sour**, fermentation of tinned products by the action of micro-organisms which produce acid but not gas, and so do not cause distension of the tin; also (with hyphen) *attrib.*; **flat space**, Euclidean space; **flat spin** *Aeronaut.*, a spin in which an aircraft descends in tight circles while not departing greatly from a horizontal attitude; *fig.*, a frenzy of agitation, a worried confusion of mind; **flat spot** (see quot. 1940); **flat-square** *a.*, of a file: one whose section is a rectangle; **flat-tail mullet**, an Australian fish (*Liza argentea*); also **flat-tailed mullet**; **flat-tool**, (*a*) ‘a turning chisel which cuts on both sides and on the end, which is square’ (Knight); (*b*) an elongated conical tool used in seal-engraving for bringing ribbons or monograms to a flat surface (*Cent. Dict.*); **flat-top**, (*a*) *U.S.*, a name for *Vernonia noveboracensis*; (*b*) *U.S. slang*, an aircraft-carrier; also **baby flat-top**, a smaller (cargo, etc.) vessel converted into a carrier; (*c*) used *attrib.* of a style of hairdressing; **flat tuning** *Radio [TUNING vbl. n.]* (see quot. 1940); **flat turn** *Aeronaut.* (see quot. 1935); **flat-ware**, (*a*) ‘plates, dishes, saucers and the like, collectively, as distinguished from hollow-ware’ (*Cent. Dict.*); (*b*) (esp. *U.S.*) domestic cutlery; **flat water local**, patches of oily water in the sea, indicating the presence of pilchards; **flat work**, (*a*) *Mining* (see quot. 1851); (*b*) a piece of material of any kind wrought into a flat shape; (*c*) *Laundry* (see quot. 1928); **flat-worm** (*Zool.*), an animal of the class *Platyhelmintha*. Also **FLAT-BOAT, -BOTTOM, -CAP, -FISH, -FOOT, HEAD**, etc.

1888 ADDY *Sheffield Gloss.*, **Flat-back*, a common knife with its back filed down after it is put together. **1904 GOODCHILD & TWENEY** *Technol. & Sci. Dict.* 226/1 *Flat backs*, whole bound or half bound books whose backs have the leather firmly glued or pasted to them. **1940 Chambers's Techn. Dict.** 339/1 *Flat-back (Moulding)*, a pattern having a flat upper surface at the joint of the mould, so lying wholly within the drag or bottom half. **1957 MANKOWITZ & HAGGAR** *Encycl. Eng. Pott. & Porc.* 53/1 Intended for display on the mantelpiece; often of a ‘flat-back’ type, modelled and decorated on one side only. **1963 C. R. COWELL et al.** *Inlays, Crowns & Bridges* xii. 140 ‘Steele’s’ flatbacks—these are useful for patients with close bites.

1597 GERARDE *Herbal* 1042 Of the *flat Beane called Lupine. **1657 W. COLES** *Adam in Eden* ccxii.

333 Some call them [Lupines] Flat-beans.

1875 J. SOUTHWARD *Dict. Typogr.* (ed. 2) 48 Hoe's Machines... The forme of type is locked~up in the bed by means of screws, by which the type is held as securely as in the ordinary manner upon a *flat bed. **1886-7** *Proc. Inst. Civil Engineers* LXXXIX. 247 In the second class is the single-cylinder machine—a cylinder impressing a forme of type on a flat bed, and printing one side only. **1892** J. SOUTHWARD *Princ. & Progr. Printg. Machin.* 108 The machine printed 3,145 sheets in the hour—a rate that is altogether unprecedented for a flat bed cylinder machine. **1906** F. H. HITCHCOCK *Building a Book* 121 In the latter part of 1812, the first flat-bed cylinder press was erected by them [*sc.* Koenig and Bauer] in Bensley's office. **1927** E. ST. JOHN *Pract. Hints Presswk.* p. xvi, For the general run of commercial work the two-revolution flat-bed cylinder press is preferred. **1932** C. C. KNIGHTS *Printing* 69 As the name implies the flat-bed machine has a flat surface or bed upon which the material to be printed is laid. **1959** *Times* 14 Jan. 12/4 The future will see photocomposition allied to letterpress printing, both flatbed and rotary, on an increasing scale. **1960** M. SPARK *Ballad of Peckham Rye* iv. 67 They are advertising for ten twin-needle flat-bed machinists. **1961** *Amer. Speech* XXXVI. 272 *Flat bed*, a truck, semitrailer, or trailer with no sides or top. **1970** *Which?* Aug. 237/2 All the [sewing] machines we tested this time had a flat bed. **1971** P. DRISCOLL *White Lie Assignment* x. 82 Two long flatbed trailers were parked with canvas-covered cylinders on them.

1793 SMEATON *Edystone L.* §221 No quarries affording *flat bedded stones having occurred.

1860 GOSSE *Rom. Nat. Hist.* 17 The *flat-bill uttered his plaintive wail.

1819 G. SAMOUELLE *Entomol. Compend.* 443 *Tinea applana*, the common *Flat-body. **1860** J. CURTIS *Farm Insects* 411 The..Flat-body Moth.

1895 J. H. & A. B. COMSTOCK *Man. Study of Insects* xiv. 139 The *flat-bugs..are the flattest of all bugs, the body appearing as if it had been stepped upon. **1921** *Trans. Amer. Entom. Soc.* XLVII. 1 Every entomologist is in a general way familiar with the 'flatbugs' of the Hemipterous genus *Aradus*, which are often met with beneath the dead bark of trees, but no systematic treatment of the numerous..species has ever been attempted. **1923** W. E. BRITTON *Guide Insects Connecticut* IV. 11 It is believed the Aradidae or 'flat bugs', are predatory on insects and other small animals. **1959** SOUTHWOOD & LESTON *Land & Water Bugs* ii. 13 *A. cinnamomeus* differs from other flatbugs whose habits are known in not being a fungus feeder, for it lives on pine sap.

1836-9 DICKENS *Sk. Boz, Scenes* xv. (1892) 125 The flaring *flat candle with the long snuff.

1493 *Bury Wills* (1850) 81 Another *flatt candelstyke of laton. **1859** DICKENS *Haunted Ho.* v. 22 A bedroom candlestick and candle, or a flat candlestick and candle—put it which way you like.

1881 *Chicago Times* 18 June, Demolishing a couple of *flat-cars.

1956 G. TAYLOR *Silver* iv. 73 *Flat-chased or embossed in such low relief as to be almost indistinguishable from flat-chasing. **1960** H. HAYWARD *Antique Coll.* 119/1 *Flat chasing, surface decoration in low relief on precious metal, produced by hammering with small blunt tools. The characteristic feature of the process is that no metal is removed.

1688 R. HOLME *Armoury* III. viii. 359/1 The third is termed a Chissel, or a *Flat Chissel. **1881** YOUNG *Every man his own Mechanic* §568 The flat chisel..is used for smoothing the work, or taking off the remaining wood that was left by the gouge.

1901 E. STEP *Shell Life* xvii. 319 The next section of these Pond-snails comprises the *Flat-coils

(*Planorbis*), made familiar by the typical species—the Ram's-horn or Trumpet-snail. **1926** A. E. ELLIS *Brit. Snails* II. 118 The snails of this family [sc. Planorbidae] are popularly called Ram's-horns, Flat-coils, or Trumpet Snails.

1901 E. STEP *Shell Life* xiii. 234 The *Skenea planorbis*, whose reddish or tawny shell at first sight looks like one of the small fresh-water *Flat-coiled Shells (*Planorbis*), whence its specific name.

1915 R. LANKESTER *Divers. Nat.* xxxiv. 346 The flat-coiled pond-snail, *Planorbis*.

1909 WEBSTER I. 828/1 *Flat-compounded. **1940** *Chambers's Techn. Dict.* 339/1 *Flat-compounded*, said of a compound-wound generator the series winding of which has been so designed that the voltage remains constant at all loads between no-load and full-load.

1704 J. HARRIS *Lex. Techn.* I. s.v. *Corona*, The *Flat-Crown, is..a particular Member in the Dorick Gate..it hath six times more Breadth than Projecture. **1868** J. CHAPMAN *Trav. Int. S. Afr.* II. 451 The umbrella-like Flat-crown, common in the Berea-bush near D'Urban. **1887** C. A. MOLONEY *Sk. Forestry W. Afr.* 346 Flatcrown of Natal. **1897** 'MARK TWAIN' *More Tramps Abroad* lxviii, The 'flat-crown' (should be flat-roof)—half a dozen naked branches, full of elbows, slant upward like artificial supports, and fling a roof of delicate foliage out in a horizontal platform as flat as a floor. **1950** *Cape Argus* 18 Mar. (Mag. Section) 7/7 The Cape ebony, white stinkwood, flatcrown, essenhou and umzimbiti, trees that yield beautiful timber for furniture-making, grow in profusion in every kloof.

1905 *Westm. Gaz.* 25 Feb. 3/2 This *Flat-Earth Society. **1909** *Ibid.* 21 Sept. 4/1 A lifelong upholder of the flat-earth theory. **1922** A. S. EDDINGTON *Theory of Relativity* 26 Those who adhered to the flat-earth theory must hold that the flat map gives the true size of Greenland.

1934 *Punch* 21 Nov. 562/1 Without being a bigoted *flat-earther, he [sc. Mercator] perceived the nuisance..of fiddling about with globes..in order to discover the South Seas. **1963** *Times* 11 May 6/2 His treatment of appoggiaturas was that of a Flat Earther with spasmodic doubts.

1908 G. B. SHAW *Fabian Essays* p. xii. Fewer votes than one would have thought possible for any human candidate, were he even a *flat-earth-man. **1951** AUDEN *Nones* (1952) 47 Lovers of small numbers go benignly potty,..are Millerites, Baconians, Flat-Earth-Men.

1873 *Slang Dict.*, *Flat-feet, the battalion companies in the Foot Guards.

1939 M. B. PICKEN *Lang. Fashion* 58/2 *Flat fell seam, flat, sturdy seam. **1964** *McCall's Sewing* ii. 28/2 *Flat-fell*, seam used on shirts, slacks and other tailored garments in which one seam is trimmed and the other stitched over it. Gives a flat, finished seam on both sides of the garment.

1841 R. HUNT *Pop. Treat. Art of Photogr.* 80 A photographic camera should possess, according to Sir John Herschel, 'the three qualities of a *flat field, a sharp focus,..and a perfect achromaticity'. **1878** W. ABNEY *Treat. Photogr.* 205 Since the manufacture of non-distorting doublets giving a fairly flat field has been perfected. **1893** *Jrnl. Soc. Arts* XLI. 384/2 The efforts of opticians..are being continually put forth in the direction of the attainment of..as near approach as possible to a 'flat field'. **1904** GOODCHILD & TWENEY *Technol. & Sci. Dict.* 226/1 A lens is said to give a flat field when the image of a distant object is equally in focus, whatever part of the screen it occupies. **1918** *Photo-Miniature* Mar. 20 *Flat field*, applied to a lens which, when photographing a flat subject, e.g., a painting, gives equal definition in all parts of the plate. **1966** LACOUR & LATHROP *Photo Technol.* x. 115/1 Enlarging lenses are designed to produce an extremely flat field.

1950 *Rev. Documentation* XVII. 134 (title) The Microcopy on *flat film as an aid in documentation.

1958 *Engineering* 31 Jan. 155/1 The two basic types—roll-film and ‘flats’, the latter including micro-cards and micro-sheet (or micro-fiches).

1913 *Sat. Evening Post* 12 Apr. 43 (Advt.) The beautiful, modern *flat finish for interior walls and ceilings. **1940** *Chambers's Techn. Dict.* 339/1 *Flat finish*, a non-glossy finish, showing no brilliancy of surface.

1959 *'Motor' Man.* (ed. 36) 38 They [sc. each pair of cylinders] are at 180 degrees and the cylinders are parallel with the ground. This is known as the *flat-four type. **1961** *New Scientist* 19 Jan. 162/2 The main features of the Ferguson ‘flat four’ design are aimed at obtaining the utmost rigidity of the crankcase.

1698 S. SEWALL *Diary* 9 Mar. (1878) I. 472 Our Horses are broke out of themselves, or else are taken out of the stable.. Sent presently to their *flat-house, but hear nothing of them. **1706** *Ibid.* 25 Mar. (1879) II. 157 Surpris'd the Sheriff and his Men at the Flat-house.

1890 JACOBI *Printing* xxi. 185 Pull three or four good sound *flat impressions, with not too much ink.

1825 J. NICHOLSON *Oper. Mech.* 555 In one kind of pointing, the courses are simply marked with the end of a trowel, called *flat-joint pointing. **1904** GOODCHILD & TWENEY *Technol. & Sci. Dict.* 126/1 *Flat joint*, a mortar joint flush with the face of the wall. **1914** JACKSON & HELLYER *Vocab. Criminal Slang* 34 *Flat joint*. Current amongst open-air sure-thing men who operate at circus gatherings, fairs, carnivals, any gaming establishment... The ‘Shells’; ‘three card monte’; the ‘eight die case’..are all grafting flat joints. The term is derived from the essentiality in all of these crooked devices of a counter or other flat area across or upon which the swindle may be conducted. **1963** MENCKEN *Amer. Lang.* xi. 731 Carnival workers, and especially *strong-joint* or *flat-joint* operators, have a more or less secret argot.

1963 A. J. HALL *Textile Sci.* iii. 149 Large amounts of *flat-knit fabric are produced with straight bar knitting machines. **1969** *Sears Catal.* Spring/Summer 19 Seamless stretch tights knit of nylon... Flat knit heels and toes.

1939 M. B. PICKEN *Lang. Fashion* 58/2 **Flat knitting*, type of knitting done in flat form.

1671 GREW *Anat. Plants* I. iv. §16 Where the Leaves are not so thick set, as to stand in the Bow-Lap, there we have the Plicature, or the *Flat-Lap.

1885 G. MEREDITH *Diana of Crossways* I. i. 15 One is not astonished at her appearing an ‘actress’ to the *flat-minded. **1928** FUNK'S *Stand. Dict.* I. 937/3 *Flat-minded*, lacking mental power, imagination, or feeling; devoid of prominent characteristics.

1812 J. H. VAUX *Flash Dict.* s.v., Any attempt or project that miscarries, or any act of folly or mismanagement in human affairs is said to be a **flat move*.

c1850 *Rudim. Navig.* (Weale) 135 **Flat nails* are small sharp-pointed nails, with flat thin heads.

1422-3 *Abingdon Acc.* (Camden) 92 Item j. **flatpece argenti*. **1530** *PALSGR.* 220/2 *Flatte pece, tasse*. **1535** *COVERDALE 1 Kings* vii. 50 *Flat peces, charges, basens*.

1881 YOUNG *Every man his own Mechanic* §275 A pair of *flat pliers, of the ordinary kind.

1891-3 *Dict. Techn. & Trade Terms of Arch. Design* 110/1 What is called ‘*flat pointing’ is done by marking the joints of the brickwork with a flat trowel. **1900** *Eng. Dial. Dict.* II. 386/1 *Kentish*. In flat-

pointing the mortar is smeared up against, and on to, the edges of each brick. **1940** *Chambers's Techn. Dict.* 339/2 *Flat pointing*, the method of pointing, used for uncovered internal wall surfaces, in which the stopping is formed into a smooth flat joint in the plane of the wall.

1881 *Porcelain Wks. Worcester* 21 The manufacture of plates and dishes is called *Flat Pressing.

1888 *JACOBI Printers' Voc.*, **Flat pull* (or *impression*), a simple proof without under or overlaying.

1848 *THACKERAY Bk. Snobs* xv, Sporting Snobs..who..rode *flat races.

1886 *EARL OF SUFFOLK*, etc. *Racing* (Badm. Libr.) i. 37 A few *flat-racers have come over [from Ireland] to us.

Ibid., Steeple-chasing ii. 289 As a rule, *flat-racing is a bad preparation for the jumper. **1890** *Daily News* 17 Feb. 3/5 When the flat-racing season begins.

1884 *S. P. THOMPSON Dyn.-Electr. Mach.* iii. 29 The *flat-ring armature may be said to present a distinct type from those in which the ring tends to the cylindrical form. **1893** *HAWKINS & WALLIS Dynamo* 122 A second magnet..can be presented to the other face of the flat-ring core. **1902** *Encycl. Brit.* XXVII. 577/2 The discoidal or flat-ring method.

1860 *Ure's Dict. Arts* (ed. 5) II. 226 **Flat rods* in mining, a series of rods for communicating motion from the engine, horizontally, to the pumps or other machinery in a distant shaft.

1935 *H. L. CAMPBELL Working of Steel* iii. 29 Steel is supplied in the form of strips, sheets, plates, and bars. The following definitions apply to these classes of *flat-rolled steel. **1962** *Times* 8 Feb. 3/1 Stainless flat-rolled products.

1717 *TABOR* in *Phil. Trans.* XXX. 562 The Græcians us'd to cover or *Flat-roof their Houses with these [tessellated] Pavements.

1874 *KNIGHT Dict. Mech.* I. 878/2 Some *flat ropes, for mining-shafts, are made by sewing together a number of ropes, making a wide, flat band.

1882 *W. D. HAY Brighter Britain* I. v. 120 Rough split sections of the great logs..fixed in the ground..so as to bring their *flat-sawn tops upon a uniform level. **1957** *N.Z. Timber Jrnl.* Mar. 52/1 *Flat sawn*, timber cut tangentially to the annual rings and giving flat grain.

1970 *New Scientist* 4 June 474/1 The development of *flat-screen television has been held back by the complexity of scanning systems for thin, flat cathode ray tubes. **1978** *Government Data Systems* July/Aug. 24/3 The displays of the future may well be electrochromic, cathodochromic, PLZT, gas plasma, flat-screen liquid crystals, or electroluminescent. **1983** *Austral. Personal Computer* Sept. 5/2 (heading) No rise for flat screen displays. **1986** *Times* 1 Feb. 11/1 Tomorrow's home entertainment—flat-screen, high quality television.

1867 *SMYTH Sailor's Word-bk.*, **Flat-seam*, the two edges or selvedges of canvas laid over each other and sewed down.

1869 *R. B. SMYTH Goldfields Victoria* 611 **Flat-sheets*, sheet iron flooring at the brace and in the plats and junction of drives to facilitate the turning and management of trucks. **1892** *Northumbld. Gloss.*, *Flat sheets*, smooth iron plates laid over an even floor at a pit bank, on which the tubs are run to be emptied or returned to the cage.

1928 E. POST *Etiquette* 626 The most complete list of *flat silver possible. **1968** *Canad. Antiques Coll.* June 10/3 Of what we call 'flat silver' there were of course spoons.

1912 T. OKEY *Introd. Basket-Making* xii. 143 Except for *Flat Skein work, a purely local industry, skeins are chiefly used by the ordinary basket-maker for handling, and for siding up light work. **1943** A. G. KNOCK *Willow Basketry* 25 What can be called Flat-Skein Work is being used, each stroke lying as nearly as possible flatly upon the one underneath.

1906 C. S. HILL in Buel & Hill *Reinforced Concrete Constr.* (ed. 2) II. vii. 175 (*heading*) *Flat slab construction. *Ibid.*, The arrangement of the reinforcement in flat-slab floors differs with the form of reinforcement used and with the form of slab arrangement. *Ibid.* 176 The accompanying drawings..show flat slab constructions with Columbian bars. **1960** K. BILLIG *Struct. Concrete* II. xiv. 537 Because of the absence of exposed corners, flat-slab construction is less vulnerable in case of fire than beam-and-girder construction.

1926 *Delineator* July 52 In the canning of greens, asparagus, peas, beans and corn, *flat sour seems to be responsible for more failures than any other one factor. **1943** J. G. BAUMGARTNER *Canned Foods* iv. 63 The facultative anaerobic group of 'flat-sour' organisms are so called because they attack carbohydrates with resultant acid..formation. *Ibid.* 64 Products containing sugar or starch are particularly liable to undergo severe spoilage by the 'flat-sour' organisms.

[**1873** W. K. CLIFFORD tr. Riemann in *Nature* 1 May 16/1 These manifoldnesses in which the square of the line-element may be expressed as the sum of the squares of complete differentials I will call *flat*.]

1883 *Encycl. Brit.* XV. 664/1 The space with which we are familiar..has been called *flat space or homaloidal space to distinguish it from other spaces in which the curvature is not zero. **1949** SYNGE & SCHILD *Tensor Calculus* viii. 295 A space in which the curvature tensor vanishes identically is called *flat*. **1953** B. SPAIN *Tensor Calculus* v. 56 In a flat space the property of parallelism is independent of the choice of a curve.

1917 'CONTACT' *Airman's Outings* iv. 104 Suddenly the machine quivered, swung to the left, and nearly put itself in a *flat spin. **1919** W. H. DOWNING *Digger Dial*. 23 *Flat spin*, to be in difficulties. Only applied to an airman. 'On a flat spin', in a bad position. **1928** *Daily Mail* 7 May 6/4 When a person becomes excited or confused, aviators say 'He went into a flat spin'. **1930** *Punch* 30 Apr. 500 Getting into a flat spin over the perishing spelling. **1957** M. SPARK *Comforters* vi. 126 It is possible for a man matured in religion by half a century of punctilious observance..to go into a flat spin when faced with some trouble which does not come within a familiar category. **1967** D. PIGGOTT *Gliding* (ed. 2) xv. 90 Recovery from a flat spin is slow and unpredictable.

1935 C. G. BURGE *Compl. Bk. Aviation* 307/2 '*Flat spot', a term applied to a particular form of hesitation when the throttle is opened from the slow running position. **1940** *Chambers's Techn. Dict.* 339/2 *Flat spot*, in a carburettor, a point during increase of air flow (resulting from increased throttle opening or speed) at which the air-fuel ratio becomes so weak as to prevent good acceleration. **1962** *Which?* Apr. (Suppl.) 74/1 Drivers complained repeatedly of a carburation 'flat spot'.

1831 J. HOLLAND *Manuf. Metal* I. 299 The files are *flat square.

1896 F. G. AFLALO *Nat. Hist. Austral.* 232 The *Flat-Tailed Mullet is also met with in estuaries. **1908** D. G. STEAD *Edible Fishes N.S.W.* 43 In form the Flat-tail Mullet is more compressed or slab-sided than the Sea Mullet. **1951** T. C. ROUGHLEY *Fish Austral.* 35 The flat-tail mullet is found in all states except Tasmania.

1853 O. BYRNE *Artisan's Handbk.* 28 *Flat tools for turning hard wood, ivory, and steel.

1859 BARTLETT *Dict. Amer., Iron Weed*, a plant, called in the North-eastern States *Flat Top. **1943** F. PRATT *Navy has Wings* 190 'Scratch one flat top,' Commander Dixon's voice had shouted..through the ship's radio. **1943** *Time* 22 Nov. 26/3 That beats a previous high scorer: the escort carrier 'B'.., another 'baby flat-top'. **1955** C. S. FORESTER *Good Shepherd* 170 Escort vessels and destroyers and baby flat-tops were coming off the ways as fast as America and England and Canada could build them. **1956** L. S. TRUSTY *Art & Sci. Barbering* 93 The principal feature of the Flat Top style is the flat top... The top should be visualized as flat and smooth as the bristles of a brush and in length from 1 and $\frac{1}{2}$ to $\frac{3}{4}$ of an inch. **1957** *N.Y. Times* 2 June VI. 26/1 A stiff version [of the crew cut] is the Flat Top Crew.

1933 'R. STRANGER' *Dict. Wireless Terms* 72 *Flat tuning. A receiver is said to possess flat tuning when a station can be heard over a wide range of movement of the condenser dial. **1940** *Chambers's Techn. Dict.* 339/2 Flat tuning, inability of a tuning system to discriminate sharply between signals having different frequencies.

1934 V. M. YEATES *Winged Victory* I. ix. 86 An Avro would do anything you wanted..even do a *flat turn just for fun if you kicked the rudder with decision. **1935** P. W. F. MILLS *Elem. Practical Flying* vi. 88 Turns made without any bank, or flat turns, as they are called.

1851 *Illustr. Catal. Gt. Exhib.* III. III. 719/1 Plates, dishes, saucers, &c., termed '*flat ware', are made from moulds which form the inside of the article, the exterior being given by 'profiles' of the required outline, made of fired clay, glazed. **1895** *Montgomery Ward Catal.* 188 Solid Sterling Flat Ware... Tea Spoons..Dessert Forks..Sugar Shells..Butter Knives. **1901** *N.Y. Even. Post* 7 May 4/5 A complete line of Rogers Flatware. **1914** G. ATHERTON *Perch of Devil* II. 241 A magnificent silver service, from many dozens of 'flat ware', to silver platters. **1952** M. McCARTHY *Groves of Academe* (1953) ix. 198 She seemed to fix her eyes on the flatware and napery with the same hypnotised effort that dragged her fork to her lips and back again.

1927 *Glasgow Herald* 10 Sept. 4 We cruise back and forward watching for signs. The chief of these is '*flat' water, as the men call the smooth, oily patches that so puzzle landward folk.

1653 E. MANLOVE *Lead-Mines* 264 Roof-works, *Flat-works, Pipe-works. **1686** PLOT *Staffordsh.* ix. §7. 335 In hammering of this flat-work they beat the plates first one by one. **1851** TAPPING *Gloss. to Manlove, Flat Work*, a mining term descriptive of a species of lead mine, so called from its form, which is broad, spreading horizontally, not without inclination. [1906 *Westm. Gaz.* 14 Nov. 9/11 Speaking generally, there has certainly been no rise during recent years, especially in what we call 'flat' articles—tablecloths, and such things.] **1921** *Electrician* 11 Mar. 304/2 In the United States..some women use their power wringer as a cold mangle for the smaller pieces of 'flat-work'. **1928** FUNK'S *Stand. Dict.* I. 937/3 Flat work (Laundry), articles that are not to be starched, as, sheets or pillow-cases, in distinction from starched articles, as, waists, collars, etc.

B. adv. (Cf. A. 2, in many examples of which the word admits of being taken as adv.)

†1. By horizontal measurement. Obs.

1663 GERBIER *Counsel* 82 Fret sealings..the workmanship only at five shillings a yard, measured flat.

2. Downright, absolutely, positively, plainly; entirely, fully, quite. Cf. DEAD *adv.* 2.

1577-87 HOLINSHED *Chron.* II. 33/2 As for Gerrot it differeth flat from Girald. **a1591** R. GREENHAM *Serm.* i. (1599) 98 They that are thus borne again..cannot fall flat away by sin. **1601** DENT *Pathw. Heaven* 246, I am flat of your minde. **1703** MOXON *Mech. Exerc.* 114 The Iron of a Plane is said to be set Rank, when its edge stands so flat below the Sole of the Plane, that..it will take off a thick shaving. **1770** JENNER *Placid Man* II. 117 Sir Harry contradicted him flat. **1784** R. BAGE *Barham Downs* II. 242 That wild thing, Peggy, told me, flat and plain, if I did so again, she would pull it off. **1838** DICKENS *Nich. Nick.* lxiv. 621, I be not the mun to crow..so I tell 'ee flat. **1842** *Spirit of Times* 21 May 138/1 Every friend of Old Whitenose would have been flat broke! **1859** BARTLETT *Dict. Amer.*, *Flat broke*, utterly bankrupt, entirely out of money. **1933** W. S. MAUGHAM *Sheppey* (1952) II. 244 You haven't turned it [*sc.* the governor's invitation] down flat?

3. †a. Directly, exactly. With respect to the quarter of the heavens: Due. *flat against*: *lit.* and *fig.* directly contrary to. Cf. DEAD *adv.* 3.

1531 TINDALE *Exp. John* (1537) 28 When the Sonne is flat sowth. **1538** LELAND *Itin.* IV. 54 Then Porte Crokerton flat Est. **1562** COOPER *Answ. Priv. Masse* 80b, Christes wordes and institution is so flat agaynst you, as you [etc.]. **1653-4** WHITELOCKE *Jrnl. Swed. Emb.* (1772) I. 123 The wind continued flatt and high against Whitelocke's course.

b. Exactly, precisely, not exceeding the stated value: used of amounts, distances, and the like. orig. *U.S.*

1909 WEBSTER 827/3 *Flat*...Without excess; exactly; due;—used chiefly of numbers or quantities; as, to run a hundred yards in ten seconds *flat*. **1945** *Sat. Rev.* 4 Aug. 22 This one, for instance,..all you fiendishly clever people will solve in no time *flat*. **1962** *Guardian* 5 July 1/5 In no time *flat* the very voice of Mrs Chichester..was on the horn. **1969** J. CLARKE *Foxon's Hole* viii. 49 It took her about two minutes *flat* to step into jeans and sweater.

4. (*to sit*) *flat down*: plump on the ground.

1852 MRS. STOWE *Uncle Tom's C.* xxviii, Sitting flat down on the floor.

C. *absol.* and *n.³*

1. *absol.* (quasi-*n.*) That which is flat. *on the flat*: on paper or canvas; on a smooth surface, as opposed to *in relief*. *from the flat*: from a painting or drawing on paper, canvas, etc. (opposed to *from the round*).

1862 J. C. ROBINSON *Ital. Sculpt.* 60 Luca..simultaneously with his enamelled terra-cotta sculptures, also practised painting..on the flat. **1884** *Cassell's Fam. Mag.* Mar. 216/1 Occupied in shading in chalk from the flat. **1885** G. ALLEN *Babylon* v, To model a composition in relief from an engraving on the flat.

b. The flat surface or portion (of anything); *esp.* the broad surface (of a blade) as opposed to the edge; also, the inside of the open hand, etc.

Sometimes treated as a n. admitting of a plural, as ‘with the *flats* of their swords’; but *flat* is more usual.

c1374 CHAUCER *Troylus* IV. 899 (927) Beth rather to hym cause of flat than egge. **1470-85** MALORY *Arthur* XVI. viii, Syre Bors..gafe hym grete strokes with the flatte of his swerd vpon the vysage. **1626** BACON *Sylva* §145 The Strings of a..Violl..doe giue a far greater Sound, by reason of the Knot, and Board, and Concaue vnderneath, than if there were nothing but onely the Flat of a Board. **1671** GREW *Anat. Plants* I. i. §16 This Cuticle is not only spread upon the Convex of the Lobes, but also on their Flats, where they are contiguous. **1719** DE FOE *Crusoe* (1840) I. iv. 69 On the flat of the green..I resolved to pitch my tent. **1727** W. SNELGRAVE *Guinea & Slave Trade* (1734) 258 He gave me a slight blow on the Shoulder, with the flat of his Cutlace. **1779** FORREST *Voy. N. Guinea* 77 An island..like the flat of a plate turned bottom up. **1816** KEATINGE *Trav.* (1817) II. 264 The breast, loins, flat of the neck. **1828** SCOTT *F.M. Perth* iii, Striking the flat of his hand against that which the armourer expanded towards him. **1833** REGUL. INSTR. *Cavalry* I. 47 The flat of the thigh to the saddle. **1861** DICKENS *Gt. Expect.* xlvi, Here's old Bill Barley on the flat of his back. **1885** MANCH. EXAM. 23 June 5/3 The military..cleared the piazza with the flats of their swords.

c. Level country. In *Horse-racing*: level ground without hedges or ditches; cf. *flat-race*; also, the level piece of turf at the end of some race-courses. Hence *gen.* The race-course.

1836 J. WILSON *Noct. Ambr.* Wks. 1855 I. 180 Sic a..body..could never haue been bred or born on the flat. **1847** G. H. H. OLIPHANT *Law conc. Horses, etc.* App. 278 A.F. Across the Flat 1 M. 2 Fur. 24 Yds. **1877** OUIDA *Puck* ix, Your young lordling spends all his..time on the ‘flat’. **1886** EARL OF SUFFOLK, etc. *Racing* (Badm. Libr.) 273 In steeple-chases, hurdle races, and on the flat. **1892** J. KENT *Racing Life* C. Bentinck ii. 48 He will win..unless a crow flies down his throat as he comes across the flat.

2. a. A horizontal plane; a level as opposed to a slope. ***on the flat of:** on the level or plane of. ***of a flat; on the same flat:** on the same level or plane.

1605 BACON *Adv. Learn.* I. v. §5. 24 No perfect discouerie can bee made vpon a flatte, or a leuell. **1607** CHAPMAN *Bussy d'Ambois Plays* 1873 II. 3 They move with equall feet on the same flat. **1626** BACON *Sylva* §805 It were good to trie that Exposing of Flesh or Fish both..some height aboue the Earth, and vpon the Flat of the Earth. **1636** MASSINGER *Bashf. Lover* III. i, It was not in The power of fortune to remove me from The flat I firmly stood on. **1650** TRAPP *Clavis* III. 17 The cloud levelled mountains, raised vallies, and laid all of a flat; that is..made all plain. **1791** BENTHAM *Panopt.* I. 155 A declivity is..preferable by far to a dead flat. **1822** T. STRANGEWAYS *Mosquito Shore* 28 This high eminence has a flat at top of about 1500 acres.

b. Sometimes opposed to *fall*.

1645 FULLER *Good Th. in Bad T.* (1841) 68 Either on the flat of an ordinary temper, or in the fall of an

extraordinary temptation. **1887** RUSKIN *Præterita* II. ii. 60 Some three inches of fall to a foot of flat.

‡c. A geometrical plane, irrespective of position; an even surface.

1624 WOTTON *Archit.* II. 83 It comes neere an Artificiall Miracle; to make diuerse distinct Eminences appeare vpon a Flat, by force of Shadowes. **1659** MOXON *Tutor Astron.* v. (1686) 137 A Plain in Dyalling is that Flat whereon a Dyal is Described. **1674** N. FAIRFAX *Bulk & Selv.* 69 Whatsoever moves as much in a flat as it can for the earths rim, we reckon [etc.].

‡d. A plane figure. *Obs. rare.*

1674 S. JEAKE *Arith.* (1696) 175 Those Superficial Figures called Like Flats..are such..as bear a certain Proportion in their Sides unto each other.

e. A flat space or flattened surface; *spec.* a flat place on the tyre or wheel of a vehicle, or the flat space on a commutator caused by sparking or irregularity of rotation.

1873 J. H. BEADLE *Undevel. West* xxvii. 576 Up the cliffs, where caves open inward, flats have been worked upon the rock. **1893** HAWKINS & WALLIS *Dynamo* 391 Occasionally, one or two segments in a commutator wear down below the general cylindrical surface of the rest, and form what is known as a 'flat'. **1906** *Westm. Gaz.* 3 July 10/2 Flats on the wheels may to a great extent be avoided by skilful driving, but there is a potential 'flat' in every skid. **1906** GOODCHILD & TWENEY *Technol. & Sci. Dict.* 808/1 A violent application of the brakes may cause several pounds' worth of damage by grinding a 'flat' on the tyres. **1930** *Engineering* 30 May 708/2 It was suggested that flats in railway wheels could, with advantage, be restricted to a depth of 3 mm. (0·118 in.). **1966** H. SHEPPARD *Dict. Railway Slang* (ed. 2) 5 *Flat*, worn part on wheel tyre due to skidding, or, in London Transport, due to excessive braking.

f. In full *optical flat*. A block or lamina (usually of glass) with one or more surfaces made accurately plane and smooth, any unevenness or departure from a perfect plane being small compared with the wavelength of light.

1897 *Astrophysical Jnl.* V. 134 The second..requires two large optical flats, each about one and one-half times the aperture of the telescope itself. **1932** HARDY & PERRIN *Princ. Optics* xvi. 345 Round flats are edged exactly like lenses but rectangular ones are edged somewhat differently. **1957** R. S. LONGHURST *Geom. & Physical Optics* viii. 135 If an optical flat is placed in contact with a shallow convex spherical surface, a thin air film of varying thickness results. **1971** *Nature* 30 Apr. 575/1 Silver chloride sheet..was made as flat as possible by compression between glass optical flats.

3. Building. **a.** The horizontal part of a roof, usually covered with lead.

1842 BRANDE *Dict. Sc. etc.*, *Flat*, that part in the covering of a house, of lead or other metal which is laid horizontal. **1855** *Act 18-19 Vict.* c. 122 §17 Fifteen inches above the highest part of any flat or

gutter.

†b. A landing on a stair-case; also, the ‘tread’ of a stair.

1730 A. GORDON *Maffei's Amphith.* 290 A Stair of 20 Steps, interrupted by a Flat. **1793** SMEATON *Edystone L.* §88 There was but one flat or tread of a step above the center of the house.

4. Mining. **a.** A horizontal bed or stratum of coal, stone, etc.; a horizontal vein of metal, or a lateral extension of a vein.

1747 HOOSON *Miner's Dict.*, The Flat always lies on that Side of the Vein which Faces the Water. **1793** SMEATON *Edystone L.* §108 The quarry-men..cross-cut the large flats, which are laid bare. **1881** RAYMOND *Mining Gloss.*, *Flat*, a horizontal vein or ore-deposit auxiliary to a main vein; also any horizontal portion of a vein elsewhere not horizontal. **1883** GRESLEY *Gloss. Coal Mining*, *Flats*, subterraneous beds or sheets of trap rock or whin. **1886** G. A. LEBOUR *Geol. Northumb. & Durh.* (ed. 2) 62 *Flat*, the lateral extension of a lead vein.

b. (See quo^ts.)

1846 BROCKETT *N.C. Words* (ed. 3) *Flatt*, in a coal mine, the situation where the horses take the coal tubs from the putters. **1883** GRESLEY *Gloss. Coal Mining*, *Flat*, a district or set of stalls separated by faults, old workings, or barriers of solid coal. **1892** *Northumbld. Gloss.*, *Flat*, the part of a screen at a pit where the coals rest, and are cleaned before being put into the waggon.

5. a. A piece of level ground; a level expanse; a stretch of country without hills, a plain; the low ground through which a river flows.

1296 *Newminster Cartul.* (1878) 144 Stokwelflatte..Seruonreflatte. **c1340** *Gaw. & Gr. Knt.* 507 Fallez upon fayre flat. **?a1400** in *Cartul. Abb. de Seleby* (Yorks. Rec. Ser.) II. 42 Xij seliones jacentes in iiii locis sive flattes. **1510** in *Yorksh. Archaeol. Jrnl.* VII. 59 note, One parcel of land called Peeston's flatt. **1602** SHAKES. *Ham.* V. i. 275 Till of this flat a Mountaine you haue made. **1695** BLACKMORE *Pr. Arth.* I. 200 Some range the Flats, and Scour the Champain Land. **1759** B. MARTIN *Nat. Hist. Eng.* I. 45 A large Flat of barren, heathy ground. **1765-75** P. POND in C. M. Gates *Five Fur Traders* (1933) 53 The wind took the Canew up in the Air—Leat hir fall on the frozen flat. **1811** J. FAREY *Gen. View Agric. Derbysh.* I. i. 133 Alluvial flat of loam or sandy loam has accumulated upon the Gravel. **1852** THACKERAY *Esmond* I. iii, A large pleasant green flat, where the village of Castlewood stood. **1857** R. B. PAUL *Lett. fr. Canterbury, N.Z.* iv. 68 The flat on which Mr. Gebbie's house stands. **1877** A. B. EDWARDS *Up Nile* viii. 199 The river widens away before us; the flats are green on either side. **1888** 'R. BOLDREWOOD' *Robbery under Arms* (1889) i. 6 Here it widened out into a large, well-grassed flat. **1944** *Living off Land* iii. 54 These mulga flats contain rocky boulders. **1968** K. WEATHERLY *Roo Shooter* 130 The doe usually fed on the plateau, but.., she sometimes came down on to the flats.

fig. 1685 DRYDEN Pref. 2nd Misc. Wks. 1800 III. 49 Milton's Paradise Lost is admirable; but am I..bound to maintain, that there are no flats amongst his elevations? 18.. DE QUINCEY Convers. Wks. 1863 XIII. 176 Very often it [conversation] sinks into flats of insipidity through mere accident. 1878 MORLEY Vauvenargues Crit. Misc. 26 The mere bald and sterile flats of character.

b. A tract of low-lying marshy land; a swamp.

1610 SHAKES. *Temp.* II. ii. 2 All the infections that the Sunne suckes vp From Bogs, Fens, Flats. **1670 MILTON Hist. Eng.** II. 53 Through bogs and dangerous flats. **1821 EARL OF DUDLEY Lett.** 27 Nov. (1840) 294 The flats and swamps of Holland. **1859 Autobiog. Beggar Boy** 99 The Cambridgeshire flats or marshes.

c. Australian. (See quot. 1869.)

1869 R. B. SMYTH Goldfields Victoria 611 *Flat*, a low even tract of land, generally occurring where creeks unite, over which are spread many strata of sand and gravel, with the usual rich auriferous drift immediately overlying the bed-rock. **1874 G. WALCH Head over Heels** 79 Every man on the flat left his claim. **1879 D. M. WALLACE Australas.** iv. 68 In the gold districts such deposits form 'flats'.

6. Chiefly pl. A nearly level tract, over which the tide flows, or which is covered by shallow water; a shallow, shoal.

1550 J. COKE Eng. & Fr. Heralds (1877) §155. 102 The sea is..full of flattes. **1595 SHAKES.** *John* v. vi. 40. **1628 DIGBY Voy. Medit.** (1868) 94 Wee shaped our course to gett ouer the flattes into the riuier of Thames. **1678 R. L'ESTRANGE Seneca's Mor.** (1702) 477 When we have scap'd so many Rocks and Flatts. **1772-84 COOK Voy.** (1790) IV. 1408 We were insensibly drawn upon a large flat, upon which lay innumerable rocks of coral, below the surface of the sea. **1813 J. THOMSON Lect. Inflamm.** 621 The boat grounded on the flats a little to the east of the pier. **1867 SMYTH Sailor's Word-bk.**, *Flat*.a shallow over which the tide flows..If less than three fathoms, it is called shoal or shallow.

fig. 1644 MILTON Educ. 2 Those Grammatick flats & shallows where they stuck.

7. Agric. ¶a. One of the larger portions into which the common field was divided; a square furlong.

1523 FITZHERB. *Surv.* 2 If they [the acres] lye by great flattes or furlonges in the commyn feldes. **1641 BEST Farm. Bks.** (Surtees) 43 In fower dayes the said dozen shearers finished the saide flatte, and there is in it 14 through landes and two gares. **1688 R. HOLME Armoury** II. ii. §32, 3 Ridges, Butts, Flats. **1885 Q. Rev.** CLIX. 325 Theoretically each flat was a square of 40 poles, containing 10 acres.

‡b. A tract of arable land; a cornfield. *Obs.*

1513 DOUGLAS *Aeneis* II. vii (vi). 13 The flate of cornys rank. *Ibid.* VII. xiii. 38 The ȝallo corn flattis of Lyde.

c. dial. (See quot.)

1879 G. F. JACKSON *Shropsh. Word-bk.*, *Flats*, same as *Feeings*. **1884** *Chesh. Gloss.*, *Flat*, a broad flat bed as distinguished from a narrow rounded butt. We speak of ploughing a field in *flats* when there is no indication of *reens*... A wide space covered by any particular crop is called a *flat*, as ‘a flat o’ taters’.

8. Something broad and thin. **a.** A thin disc.

1732 BERKELEY *Alciphr.* IV. ix, Is it [a planet] not a round luminous Flat, no bigger than a Sixpence?

‡b. Chiefly *pl.* Dice of a shape to fall unfairly when thrown. (Cf. A. 5b.) *Obs.*

1545 R. ASCHAM *Toxoph.* (Arb.) 54 What false dise vse they?..flattes, gourdes. **1664** J. WILSON *Cheats* IV. i. Dram. Wks. (1874) 67 Taught you the use of..the fullam, the flat, the bristle. **1711** PUCKLE *Club* 21 *note*, At dice they have the doctors, the fulloms, loaded dice, flats.

c. slang. in *pl.* Playing-cards. Cf. BROAD *n.* 6.

1812 J. H. VAUX *Flash Dict.*, *Flats*, a cant name for playing cards. **1821** D. HAGGART *Life* 56 We played at flats in a budging-crib.

d. Cotton-spinning. (See quot. 1874.)

1851 L. D. B. GORDON in *Art Jrnl. Illustr. Catal.* p. iv**/2 The filaments, after emerging from the flats, lie in nearly parallel lines among the card teeth of the drum. **1874** KNIGHT *Dict. Mech.* I. 878/1 *Flat* (*Carding*), a strip of wood clothed with bent teeth, and placed above the large cylinder of a carding-machine.

e. In a breech-loading gun: The piece of metal projecting from the breech to support the barrel.

1881 GREENER *Gun* 230 When the barrels are for breech-loaders, the flats are formed on the undersides of the breech-ends.

f. A flat strip of wood inserted under the inner edge of a picture-frame and projecting beyond it; usually gilded. Called also **MAT**.

1886 W. G. RAWLINSON in *19th Cent.* XIX. 400 Small drawings..greatly injured by the very modern-looking deep gold flats brought close up to them.

g. In various uses (see quot.).

1688 R. HOLME *Armoury* II. 464/2 Women wear Hair..in Falls or Flats when the hair hangs loose down about the shoulders. **1804** J. ROBERTS *Penn. Farmer* 55 It is made like a gate, with five bars or flats. **1847** HALLIWELL, *Flats*, small white fresh-water fish, as roach, etc. **1858** SIMMONDS *Dict. Trade*, *Flat*..a rough piece of bone for a button mould. **1874** KNIGHT *Dict. Mech.* I. 878/1 *Flat*, a surface of size over gilding. **1888** Lockwood's *Dict. Mech. Engin.*, *Flats*, Flat Bar Iron. **1891** *Century Mag.* Feb. 526/2 The Mexican system of crushing grain by hand on the *metate*, as the flat under the millstone of the Mexicans and native Californians is called. **1893** FARMER *Slang*, *Flats*, base money. **1962** A. NISBETT *Technique Sound Studio* 253 *Flat*. (a) On a stylus, this is a surface of wear which appears on the two sides of the tip after some period of use... (b) On the rubber tyre of an idler wheel, a 'flat' is an indentation which may form if the idler is left 'parked' in contact with the drive spindle, or other surface. **1967** E. CHAMBERS *Photolitho-Offset* 272 *Flat*, a number of negatives stripped-up or assembled in position for printing-down on to a single sheet of metal.

9. Something broad and shallow. **a.** A broad, flat-bottomed boat.

1749 W. DOUGLASS *Summary* (1755) I. 461 A large scow or flat, to carry persons, cattle, and goods with a canoe-tender. **1801** NELSON in A. Duncan *Life* (1806) 194 The enemy's..flats (lugger-rigged)..were..anchored..Three of the flats and a brig were sunk. **1867** SMYTH *Sailor's Word-bk.*, *Flats*..lighters used in river navigation, and very flat-floored boats for landing troops. **1879** F. T. POLLOK *Sport Brit. Burmah* I. 21, l..went up in the first Government steamer and flat to Prome.

b. A broad, shallow basket used for packing produce for the market. Cf. A. 5e.

1640 in ENTICK *London* II. 181 Packs, trusses, flats, or maunds. **1840** *New Monthly Mag.* LIX. 267 A basket..resembling those which..they call butter-flats. **1886** *Daily News* 4 Dec. 5/4 Watercress..costs the hawker at the rate of from 16s. to 17s. a flat. **1889** A. T. PASK *Eyes Thames* 158 The Mimosa comes over in small flat hampers called 'flats'.

c. A shallow two-wheeled hand-cart.

1884 *Chamb. Jrnl.* 5 Jan. 9/1 Butchers' carts, costermongers' flats, and other light conveyances.

d. (See quot.)

1791 HAMILTON *Berthollet's Dyeing* II. II. i. ii. 32 Silk treated with these galls gained in the dye-bath

or flat. **1804** CT. RUMFORD in *Phil. Trans.* XCIV. 178 The broad and shallow vessels (flats) in which brewers cool their wort.

e. U.S. = flat-car: see A. 15.

1864 in WEBSTER.

f. Applied to articles of dress. (*a*) A low shoe or sandal; (*b*) a low-crowned hat (U.S.).

1834 J. R. PLANCHÉ *Brit. Costume* 375 *Brogue-uirleaker*, that is flats made of untanned leather, graced their feet. **1859** BARTLETT *Dict. Amer.*, *Flat*, a broad-brimmed, low-crowned, straw hat, worn by women. **1864** MISS WETHERELL *Old Helmet* II. xvi. 269 But you will not wear that flat there? **1938** *Times* 11 Mar. 19/4 With your suit, coloured shoes and bags are favourites. Particularly chic are the crocodile ‘flats’ in cornflower-blue, [etc.]. **1950** A. LOMAX *Mr. Jelly Roll* (1952) i. 19 They wore what they called the St. Louis Flats and the Chicago Flats, made with cork soles and without heels and with gambler designs on the toes.

10. Ship-building. **a.** (see quot. 1867.)

1815 Falconer's *Dict. Marine* (ed. Burney), *Flats*, in ship-building, the name given to all the timbers in midships. **1867** SMYTH *Sailor's Word-bk.*, *Flats*, all the floor-timbers that have no bevelings in midships, or pertaining to the dead-flat. **1869** E. J. REED *Shipbuild.* v. 95 Horizontal flats extending between the bulkhead and a cast iron cellular stern-post.

b. The partial deck or floor of a particular compartment.

1869 E. J. REED *Shipbuild.* ix. 177 Iron plates similar to those used in the flats of stoke-holes. **1893** *Daily News* 3 July 5/6 Tank room, capstan engine flat, and..the patent fuel space.

11. Theat. A part of a scene mounted on a wooden frame which is pushed in horizontally or lowered on to the stage. Also phr., *to join the flats*: to make into a consistent whole, to give unity.

[**1746** GARRICK *Let.* 11 Dec. in *Corresp.* (1831) I. 46 He had built up the stage, but as nobody came there, he shut in a flat scene to hide it.] **1795** F. REYNOLDS *Rage* II. ii. 27 An elegant Apartment leading to Lady Sarah's Dressing-Room—the Door in the Flat. **1807** *Director* II. 331 The entire assemblage of wings and drops and flat. **1836-9** DICKENS *Sk. Boz* (1850) 259/1 A strange jumble of flats, flies, wings [etc.]. **1901** *Daily Chron.* 21 Aug. 3/4 The ‘flats’ of her career, so to speak, are not quite joined. **1908** *Ibid.* 29 Apr. 3/3 The ‘flats’ of the new edition are not very well ‘joined’. **1921** G. B. SHAW *Pen Portraits* (1932) 175 Really, Henry Arthur [Jones], you might at least join your flats. **1923** — *Shaw on Theatre* (1958) 161 A pit without stalls, which jeered mercilessly when the flats would not join. **1932** E. V. LUCAS *Reading, Writing & Remembering* iii. 66 He [sc. Mr. Asquith] gave the reporters less work in making him grammatical and fluent than any other speaker. There was no need to join his flats. **1957**

Oxf. Compan. Theatre (ed. 2) 264/1 The frame of an English flat consists of four 3 × 1 in. timbers, of which the two vertical side-pieces are the Stiles, and the others, the top and bottom Rails. *Ibid.* 265/1 In the mid-nineteenth century..it was..used in the phrase ‘a pair of flats’, and was confined to the two separate halves of a back scene... Farther back, the word is used only adjectivally, and the full term is Flat Scene.

12. House-painting. A surface painted without gloss, so as to appear dead: see DEAD a.
13b. Also the pigment employed for this purpose. Cf. FLATTING. **bastard flat** (see quot.).

1823 *Mechanic's Mag.* No. 7. 108 The rooms..were painted with Chinese Flat on walls. **1881** YOUNG *Every man his own Mechanic* §1591 *Bastard Flat* is thinned with turpentine and a little oil..To procure a good flat, it is necessary to have a perfectly even glossy ground, and it should be of the same tint, but a little darker than the finishing flat.

13. slang. A person who is easily taken in, and is said to be ‘only half sharp’; a duffer, simpleton. Cf. A. 8. **a prime flat** (see quot. 1812).

1762 GOLDSM. *Nash Wks. (Globe)* 546/2 If the flat has no money, the sailor cries, I have more money than any man in the fair. **1812** J. H. VAUX *Flash Dict.*, *Flat*..any person who is found an easy dupe to the designs of *the family* is said to be a *prime flat*. **1848** THACKERAY *Van. Fair* x, ‘You wouldn't be such a flat as to let three thousand a year go out of the family.’

14. Music. **a.** A note lowered half a tone below the natural pitch. **b.** In musical notation, the sign ♭ which indicates this lowering of the note; a **double flat** ♭ indicates that it must be lowered by two semitones. **c. sharps and flats:** the black keys of the keyboard of a piano.

1589 R. HARVEY *Pl. Perc.* (1590) 21 It can neuer be goode musicke, that stands all vpon sharps, and neuer a flat. **a** **1634** RANDOLPH *Muses' Looking-Gl.* IV. v, The lutenist takes flats and sharps, And out of those so dissonant notes does strike A ravishing harmony. **1669** COKAINE *Fun. Elegy T. Pilkington Poems* 78 His Flats were all harmonious. **1674** PLAYFORD *Skill Mus.* I. iv. 15, I have seen some songs with four flats. **1694** *Phil. Trans.* XVIII. 72 Flats or Half-notes to other Keys. **1706** A. BEDFORD *Temple Mus.* iii. 57 Methods of altering their Tunes, by Flats and Sharps placed at the Beginning. **1806** J. W. CALLCOTT *Mus. Gram.* v. 57 The mark now used for the Flat was originally the letter B. **1834** MEDWIN *Angler in Wales* I. 215 Twelve lines in each, of hair and Indian hurl, alternately, like the flats and sharps of a piano. **1872** BANISTER *Music* 7 A Flat, ♭, indicates the lowering of the note to which it is prefixed, one semitone.

d. sharps and flats: used punningly for (a) sharpers and their victims; (b) recourse to weapons.

(a) **1801** *Sporting Mag.* XVII. 37 There are sharps and flats in Paris as well as London. **1825** C. M. WESTMACOTT *Eng. Spy* I. 368 That emporium for sharps and flats, famed Tattersall's.

(b) 1818 SCOTT *Hrt. Midl.* xxx, He was somewhat hasty with his flats and sharps.

15. Short for *flat-racer*.

1811 *Sporting Mag.* XXXVIII. 168 He had one of the finest flats in the world in training.

16. U.S. colloq. *to give the flat*: to give a flat refusal (to a suitor). (Cf. A. 6.)

1859 in BARTLETT *Dict. Amer.*

17. attrib. and Comb., as *flat-like* adj.; **flat-catcher**, one who takes in simpletons; a swindler; also used of a horse; so *flat-catching* vbl. n.

1821 MONCRIEFF *Tom & Jerry* I. vi. (1828) 22 Do you think we shall get the *flat-catcher [a horse] off to-day? 1841 *Blackw. Mag.* Aug. 202 Buttoners are those accomplices of thimbleriggers..whose duty it is to act as flat-catchers or decoys, by personating flats. 1864 *Lond. Rev.* 18 June 643/2 'The Bobby' or chinked-back horse, is another favourite flat-catcher.

1821 EGAN *Tom & Jerry* 346 The no-pinned hero..gave, as a toast, 'Success to *Flat-catching'.

1813 *Sporting Mag.* XLII. 24 It would appear degrading and *flat-like.

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lofted, *ppl. a.*

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(**lɔftid**, -ɔɪ-) [f. LOFT *n.* and *v.* + -ED.]

1. Of a house: **a.** Ceiled or floored (*obs.*). **b.** (*Sc. and north. dial.*) Having one or more stories above the ground floor.

1549 *Compl. Scotl.* xi. 96 That na Scottis man suld duel in ane house that vas loftit, bot rather in ane litil cot house. **1639** *Declaration* in *Athenaeum* 19 July (1890) 99/2 The dwelling howse of her brother..was all well lofted and boarded over wth oken boards. **c1730** *BURT Lett. N. Scotl.* (1760) II. xxii. 205 If any one has a Room above, it is by way of Eminence called a lofted House. **1814** *SCOTT Wav.* xix, A lofted house, that is a building of two stories. **c1856** *Denham Tracts* (1892) I. 343 The house being what in those districts [Northumberland] is termed lofted.

2. Golf, etc. **a.** Of a cleek or club: Made with a ‘loft’ (see LOFT *n.* 7a). **b.** Of a stroke: That ‘lofts’ the ball.

1887 W. G. SIMPSON *Golf* 158 Certainly a more lofted cleek might be used. *Ibid.* 159 If a half-topped shot travels further than a lofted one over ordinary turf, the club has too much pitch. **1890** HUTCHINSON *Golf* (Badm. Libr.) 122 Using..an exceptionally lofted club to obtain the same result. *Ibid.* 200 The lofted approach is not a fancy shot.

c. Of a ball: hit into the air.

1904 *Daily Chron.* 20 Aug. 9/5, I saw a lofted ball..miss the head of a player in front by not more than six inches. **1955** *Times* 29 June 4/3 He made the winning hit, a lofted straight four, on the stroke of time. **1963** *Times* 27 May 5/3 The same player scored from a 30-yard penalty, while Ramsden replied with a well lofted hit from 40 yards.